FUNAI

# SERVICE MANUAL

## Sec. 1: Main Block

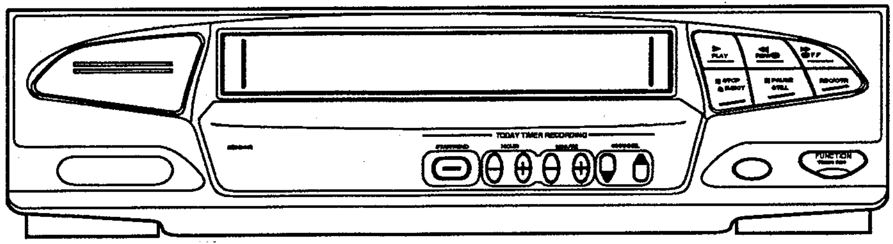
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's
- Exploded Views
- Parts List

## Sec. 2: Deck Mechanism Block

- Standard Maintenance
- Alignment for Mechanism
- Disassembly / Assembly of Mechanism
- Deck Schematic Diagram
- Deck CBAs
- Deck Exploded Views
- Deck Parts List

# VIDEO RECORDER

## 8A-007 / 8A-027 / 9A-027S


PLAY
REW
F.FF
STOP/EJECT
PAUSE/STILL
REC/OTR
TODAY TIMER RECORDING
FUNCTION

VHS
PAL

# MAIN BLOCK

# VIDEO RECORDER

## 8A-007 / 8A-027 / 9A-027S

**Sec. 1: Main Block**

- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's
- Exploded Views
- Cabinet & Electrical Parts List

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# SPECIFICATIONS

## PAL-(B / G)

| Description | Unit | Minimum | Nominal | Maximum | Condition |
|---|---|---|---|---|---|
| **1. Video** | | | | | F6-A |
| 1-1. Video Output | Vp-p | 0.8 | 1.0 | 1.2 | PB mode |
| 1-2. Video Output | Vp-p | 0.8 | 1.0 | 1.2 | R/P mode |
| 1-3. Video S/N | dB | 40 | 44 | | R/P mode |
| 1-4. Video Color S/N AM | dB | 37 | 41 | | R/P mode |
| 1-5. Video Color S/N PM | dB | 30 | 36 | | R/P mode |
| 1-6. Resolution | Line | 230 | 245 | | R/P mode |
| **2. Servo** | | | | | F6-N |
| 2-1. Jitter at Low | µsec | 0.12 | 0.07 | | PB mode |
| 2-2. Wow & Flutter | % | 0.5 | 0.3 | | R/P mode |
| **3. Audio** | | | | | F6-A |
| 3-1. Output | dBv | -11 | -8 | -5 | PB mode |
| 3-2. Output | | -11 | -8 | -3.5 | R/Pmode |
| 3-2. S/N | dB | 36 | 41 | | R/Pmode |
| 3-3. Distortion Input; -10dBv | % | 4.0 | 1.0 | | R/P mode |
| 3-4. Freq. response. at 100Hz | dB | -7 | -4 | | R/P mode |
| Input; -20dB 8kHz | dB | -10 | -4 | | R/P mode |
| **4. TUNER ( Model : 8A-007 / 8A-027)** | | | | | |
| 4-1. Channel VL | CH | E2-E4 , X, Y, Z, S1 | | | E-E mode |
| VH | CH | E5-E12 , S2-S20 | | | E-E mode |
| UHF | CH | E-21-E69 | | | E-E mode |
| 4-2. Video Output | Vp-p | 0.8 | 1.0 | 1.2 | E-E mode |
| 4-3. Video S/N (E45 CH) | dB | 39 | 42 | | E-E mode |
| 4-4. Audio Output | mV/rms | 250 | 400 | 550 | E-E mode |
| 4-5. Audio S/N | dB | 40 | 46 | | E-E mode |
| **4. TUNER ( Model : 9A-027S)** | | | | | |
| 4-1. Channel VL | CH | E2-E4 , X, Y, Z, S1-S4 | | | E-E mode |
| VH | CH | E5-E12 , S5-S30 | | | E-E mode |
| UHF | CH | E-21-E69 , S31-S41 | | | E-E mode |
| 4-2. Video Output | Vp-p | 0.8 | 1.0 | 1.2 | E-E mode |
| 4-3. Video S/N (E45 CH) | dB | 39 | 42 | | E-E mode |
| 4-4. Audio Output | mV/rms | 250 | 400 | 500 | E-E mode |
| 4-5. Audio S/N | dB | 40 | 46 | | E-E mode |

**Note:** Nominal specs represent the design specs. All units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; In no case should a unit fail to meet limit specs.

# IMPORTANT SAFETY PRECAUTIONS

## Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

## Precautions during Servicing

**A.** Parts identified by the ⚠ symbol are critical for safety.
Replace only with part number specified.

**B.** In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

**C.** Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

**D.** Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation tape
2) PVC tubing
3) Spacers
4) Insulators for transistors

**E.** When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

**F.** Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

**G.** Check that replaced wires do not contact sharp edges or pointed parts.

**H.** When a power cord has been replaced, check that 4-5 kg of force in any direction will not loosen it.

**I.** Also check areas surrounding repaired locations.

**J.** Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

**K.** When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

## Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

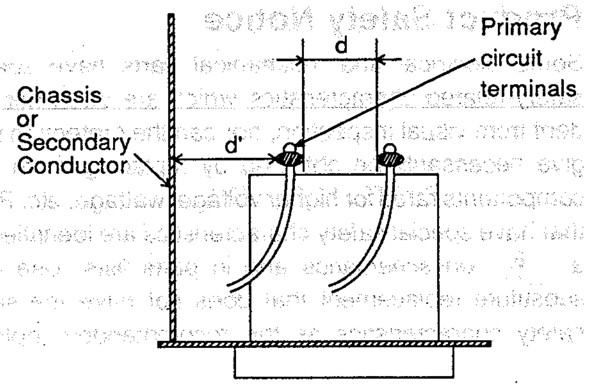


Fig. 1

### 1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

**Table 1 : Ratings for selected area**

| AC Line Voltage | Region | Clearance Distance (d) (d') |
|---|---|---|
| 220 to 240 V | Europe or Australia | ≥ 4 mm(d)<br>≥ 6 mm(d') |

**Note:** This table is unofficial and for reference only. Be sure to confirm the precise values.

### 2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

**Measuring Method (Power ON) :**

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

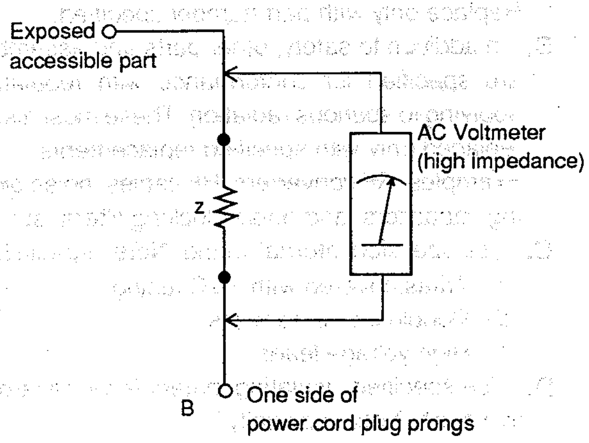


Fig. 2

**Table 2 : Leakage current ratings for selected areas**

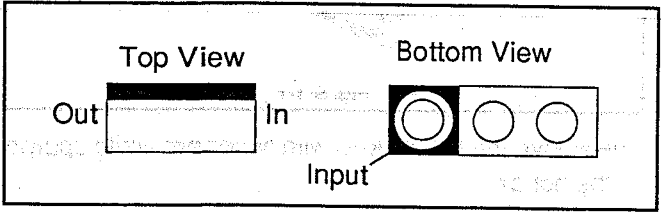
| AC Line Voltage | Region | Load Z | Leakage Current (i) | One side of power cord plug prongs (B) to: |
|---|---|---|---|---|
| 220 to 240 V | Europe or Australia | 2kΩ RES. Connected in parallel | i≤0.7mA AC Peak<br>i≤2mA DC | RF or Antenna terminals |
| | | 50kΩ RES. Connected in parallel | i≤0.7mA AC Peak<br>i≤2mA DC | A/V Input, Output |

**Note:** This table is unofficial and for reference only.
Be sure to confirm the precise values.

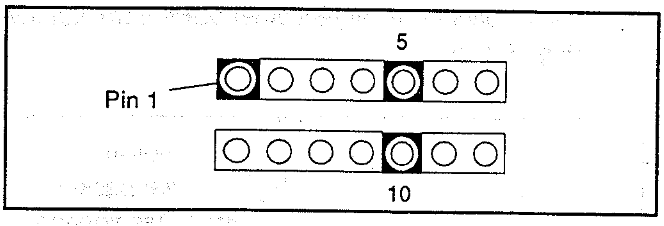
# STANDARD NOTES FOR SERVICING

## Circuit Board Indications

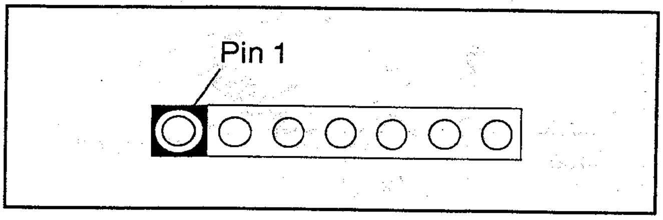
a. The output pin of the 3 pin Regulator ICs is indicated as shown.



b. For other ICs, pin 1 and every fifth pin are indicated as shown.

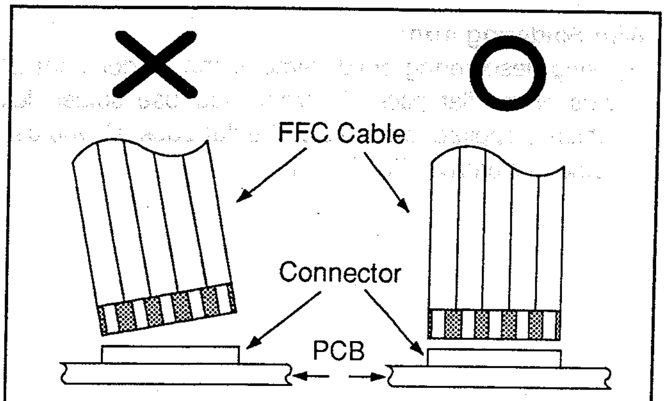


c. The 1st pin of every male connector is indicated as shown.



## Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable , be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.

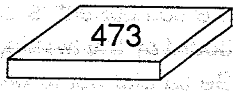


* Be careful to avoid a short circuit.

## How to read the values of the Rectangular type chip components

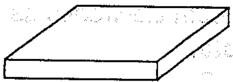
**Example:**

(a) Resistor



=473=47[kΩ] (Top View)

(b) Capacitor



=No Indication (Top View)

**Caution:**

Once chip parts (Resistors, Capacitors, Transistors, etc.) are removed, they must not be reused. Always use a new part.

## Replacement Procedures for Leadless (Chip) Components

**The following procedures are recommended for the replacement of the leadless components used in this unit.**

**1.Preparation for replacement**

a. Soldering iron

Use a pencil-type soldering iron (less than 30 watts).

b. Solder

Eutectic solder (Tin 63%, Lead 37%) is recommended.

c. Soldering time

Do not apply heat for more than 4 seconds.

d. Preheating

Leadless capacitors must be preheated before installation.
(266°F-302°F 130°C-150°C, for about two minutes.)

**Note:**

a. Leadless components must not be reused after removal.
b. Excessive mechanical stress and rubbing of the component electrode must be avoided.

**2.Removing the leadless component**

Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes has melted, remove the leadless component with a twisting motion.

**Note:**

a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by the twisting action.

b. Be careful not to break the copper foil on the printed circuit board.

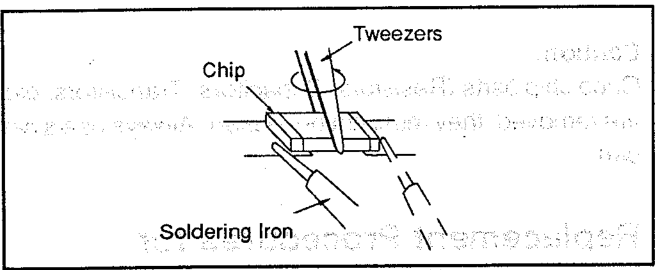
**3. Installing the leadless component**

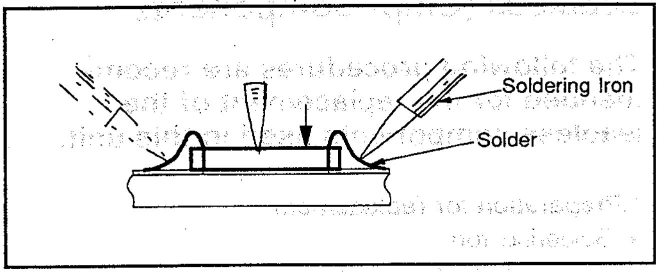
a. Presolder the contact points of the circuit board.

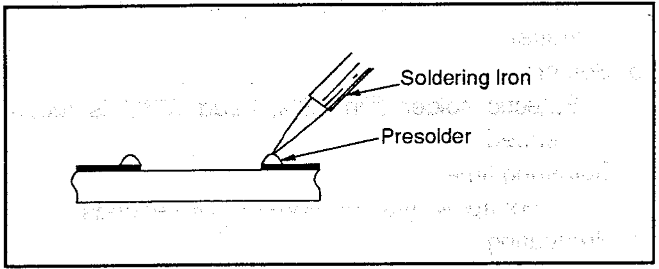
b. Press the part downward with tweezers and solder both electrodes as shown below.

**Note:**

Do not glue the replacement leadless component to the circuit board.







## How to Remove / Install Flat Pack IC

**1. Removal**

**With Hot-Air Flat Pack-IC Desoldering Machine:**

(1)Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

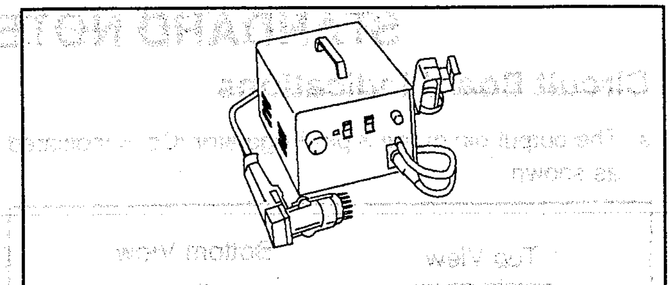


Fig. S-1-1

(2)Remove the flat pack-IC with tweezers while applying the hot air.

**Caution:**

1. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

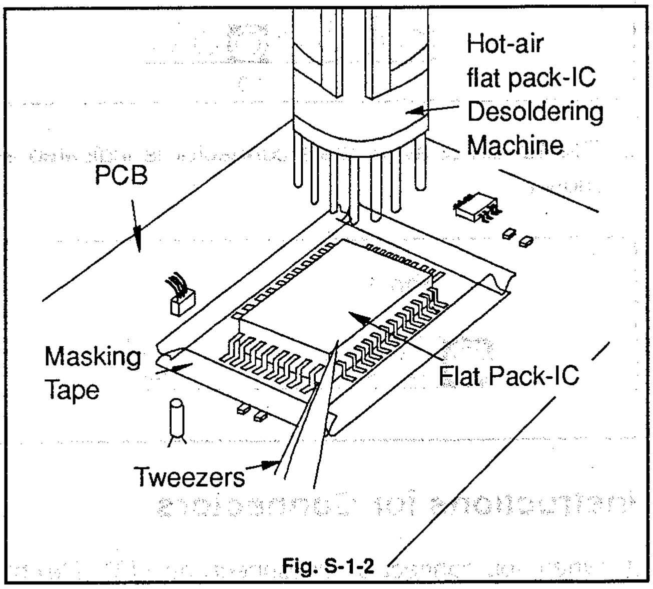


Fig. S-1-2

2. The flat pack-IC on the PCB is affixed with glue, so be careful not to break or damage the foil of each pin or the solder- lands under the IC when removing it.

**With Soldering Iron:**

(1)Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

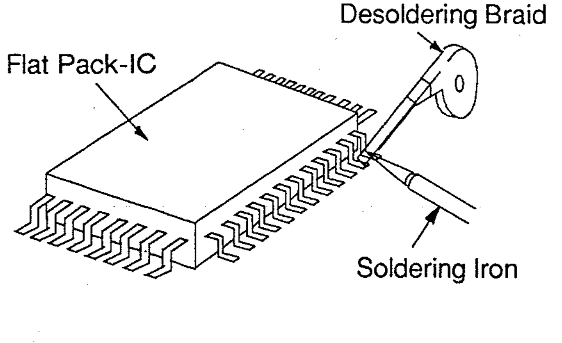

Desoldering Braid
Flat Pack-IC
Soldering Iron

Fig. S-1-3

(2)Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

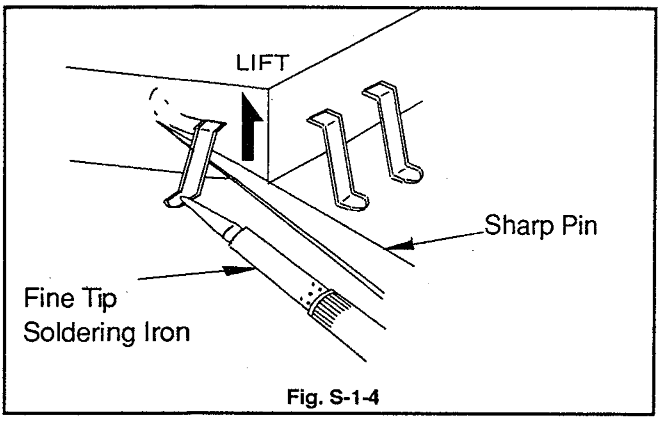

LIFT
Sharp Pin
Fine Tip
Soldering Iron

Fig. S-1-4

**With Iron Wire:**

(1)Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

(2)Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

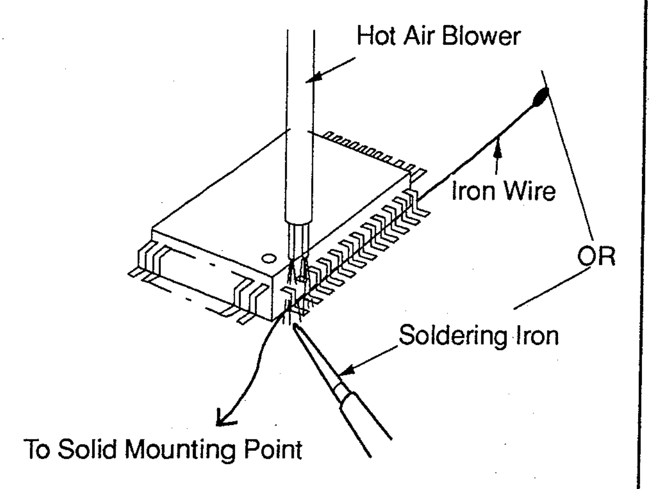

Hot Air Blower
Iron Wire
OR
Soldering Iron
To Solid Mounting Point

Fig. S-1-5

(3)While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the PCB contact pads as shown in Fig.S-1-5.

**Note:**

When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the PCB, handle it gently because it may be damaged if force is applied.

## 2. Installation

(1)Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the PCB so you can install a replacement flat pack-IC more easily.

(2)The " • " mark on the flat pack-IC indicates pin 1. (See Fig. S-1-6.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then pre- solder the four corners of the flat pack-IC. (See Fig. S-1-7.)

(3)Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

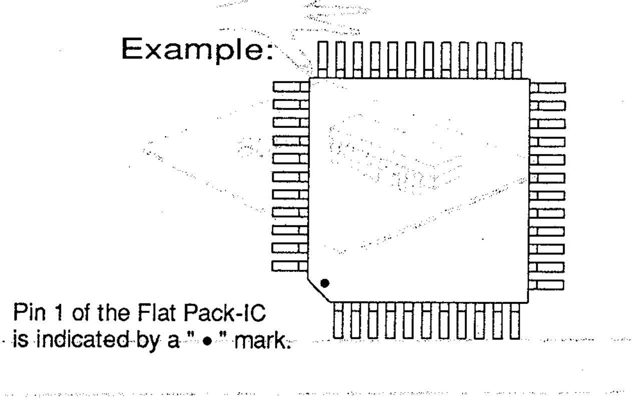

Example:
Pin 1 of the Flat Pack-IC
is indicated by a " • " mark.

Fig. S-1-6

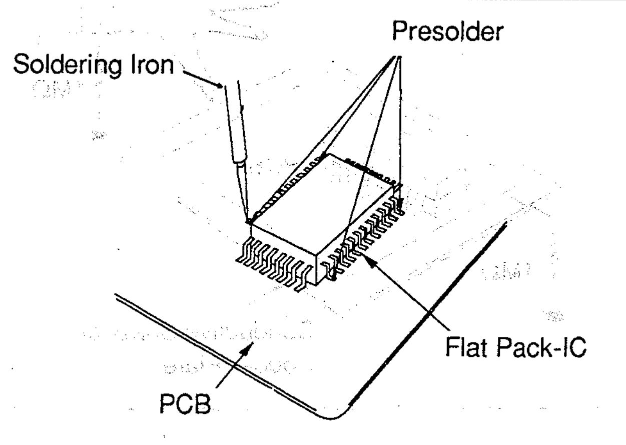

Presolder
Soldering Iron
Flat Pack-IC
PCB

Fig. S-1-7

# Instructions for Handling Semiconductors

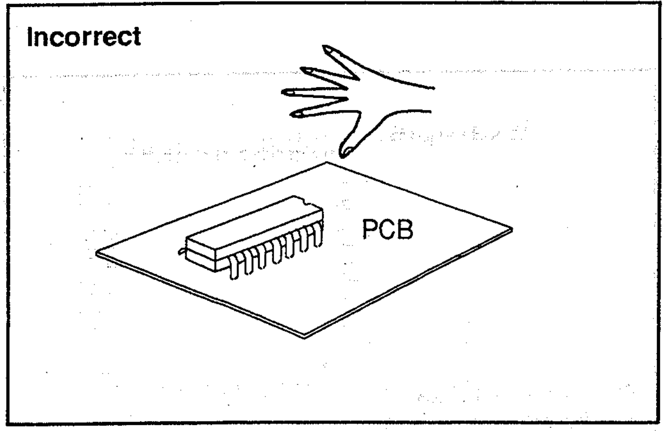
Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

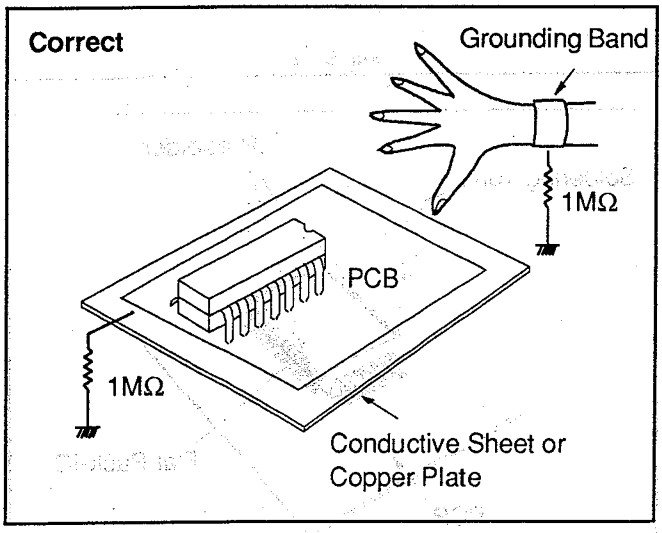
## 1. Ground for Human Body

Be sure to wear a grounding band (1M ohm) that is properly grounded to remove any static electricity that may be charged on the body.

## 2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1M ohm) on the workbench or other surface, where the semiconductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semiconductors with your clothing.


Incorrect
PCB

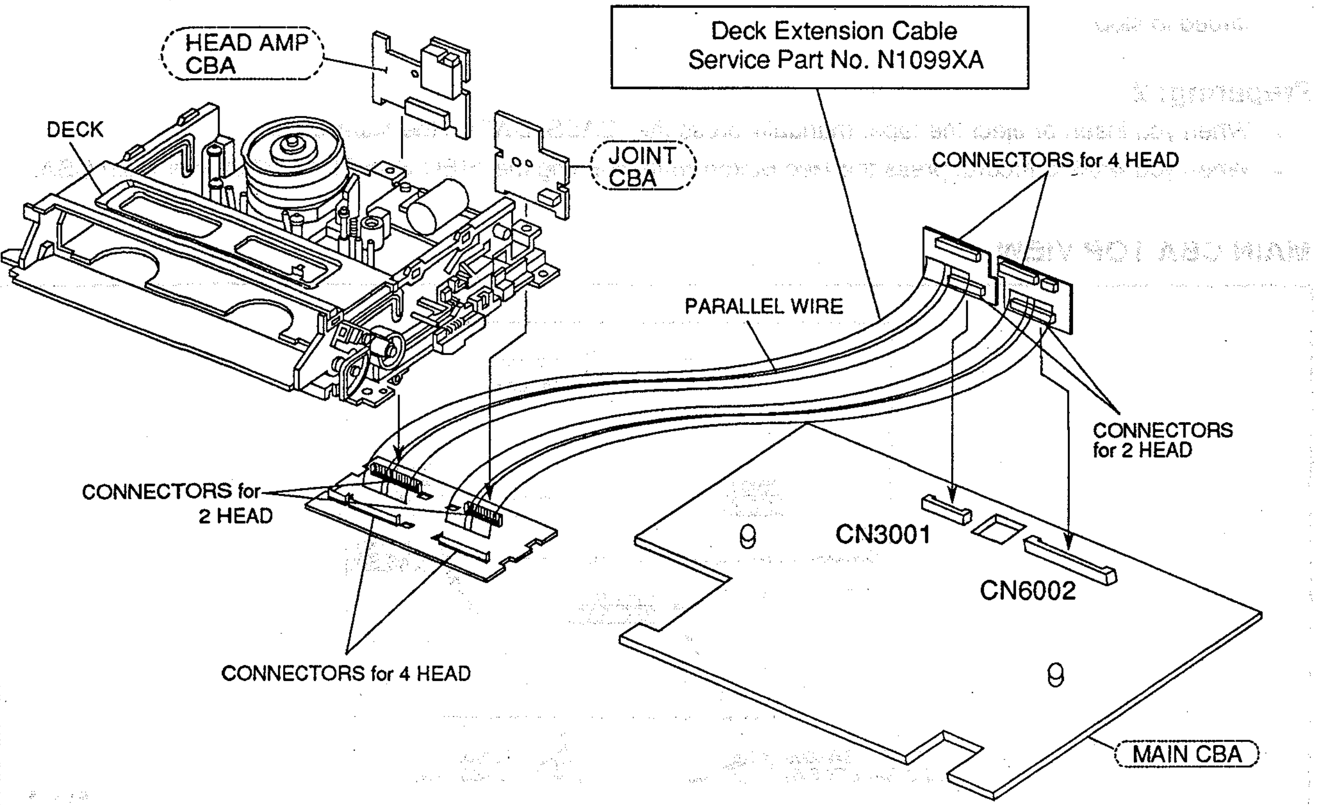

Correct
Grounding Band
1MΩ
PCB
1MΩ
Conductive Sheet or Copper Plate

# PREPARATION FOR SERVICING

## How to Use Service Fixture

(1) Remove Deck Mechanism Assembly.
If needed, remove Main CBA from chassis.
(2) Connect Deck Mechanism Assembly and Main CBA using the deck extension cable.

**Note:**
The deck extension cable can be used for 4-head models and 2-head models.
Be sure to use correct connectors which are specified.


HEAD AMP CBA
Deck Extension Cable
Service Part No. N1099XA
DECK
JOINT CBA
CONNECTORS for 4 HEAD
PARALLEL WIRE
CONNECTORS for 2 HEAD
CONNECTORS for 2 HEAD
CN3001
CN6002
CONNECTORS for 4 HEAD
MAIN CBA

# How to Enter The Service Mode

## Caution: 1

- Optical sensor system is used for Tape Start and End Sensor on this equipment. Read this page carefully and prepare as described on this page before starting to service : otherwise , the unit may operate unexpectedly.

## Preparing: 1

- The service connector(CN6004) is initially provided in the unit as shown in the Fig.A.
  Reconnect the Service connectors as shown in the Fig.B, so as to both tape sensors to be inactive.
  **Note**: Do not run a tape all the way to the start or end of the tape to avoid tape damage due to inactive tape end sensor.

## Caution: 2

- The Deck Mechanism Assembly is mounted on the Main CBA directly, and Cassette Loading Switch and REC-Safety Switch are mounted on the Main CBA. When The Deck Mechanism Assembly is removed from the Main CBA due to servicing, these switches can not operated automatically. The Reel Sensor is mounted on the Main CBA. When Deck Mechanism Assembly is removed from the Main CBA due to servicing, the Cylinder is forced to stop.

## Preparing: 2

- When you insert or eject the tape, manually press the "CASS. SW" on the Main CBA.
- When you want to record, press the Rec Button while pushing the "REC-SAFETY SW" on the Main CBA.

## MAIN CBA TOP VIEW

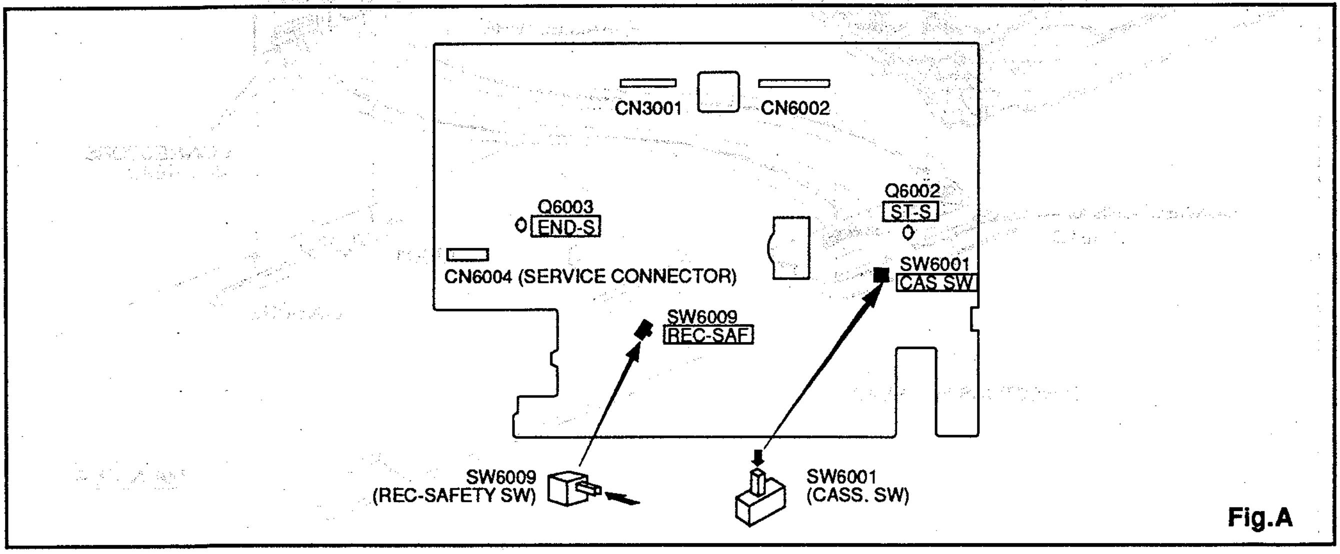

CN3001
CN6002
Q6003
END-S
Q6002
ST-S
CN6004 (SERVICE CONNECTOR)
SW6001
CAS SW
SW6009
REC-SAF
SW6009
(REC-SAFETY SW)
SW6001
(CASS. SW)

Fig.A

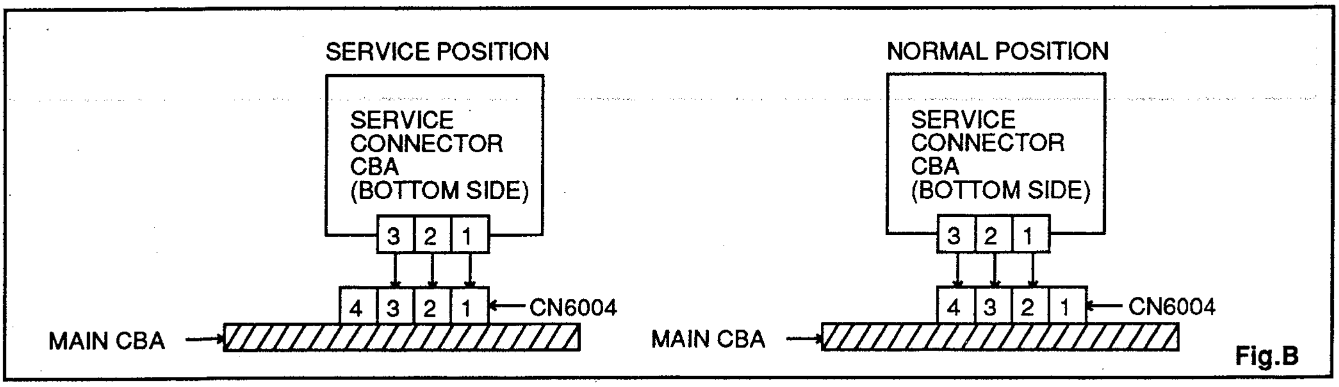
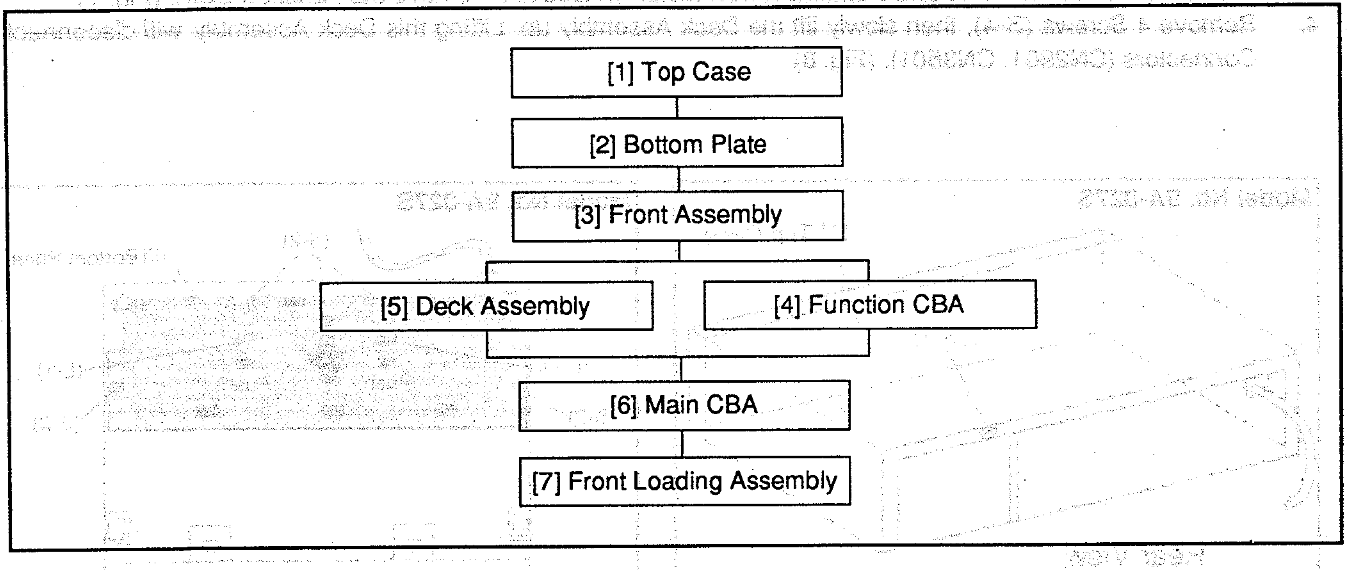

SERVICE POSITION
SERVICE CONNECTOR CBA (BOTTOM SIDE)
3 2 1
4 3 2 1
CN6004
MAIN CBA
NORMAL POSITION
SERVICE CONNECTOR CBA (BOTTOM SIDE)
3 2 1
4 3 2 1
CN6004
MAIN CBA

Fig.B

# CABINET DISASSEMBLY INSTRUCTIONS

## 1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route and dress the cables as they were.



## 2. Disassembly Method

| STEP / LOC. No. | PART | REMOVAL | | |
|---|---|---|---|---|
| | | Fig. No. | REMOVE/ *UNLOCK/RELEASE/UNPLUG/UNCLAMP/DESOLDER | Note |
| [1] | Top Case(9A-027S) | Fig. 1 | (S-1) | - |
| [1] | Top Case(8A-007/027) | Fig. 2 | 5(S-1) | - |
| [2] | Bottom Plate(9A-027S) | Fig. 3 | 4(S-2), *2(L-1) | 1 |
| [2] | Bottom Plate(8A-007/027) | Fig. 4 | 2(S-2), *2(L-1) | 1 |
| [3] | Front Assembly | Fig. 5,6 | *8(L-2), Deck Holder | 2 |
| [4] | Function CBA | Fig. 7 | (CN5501), (L-3) | 3 |
| [5] | Deck Assembly | Fig. 8 | 4(S-4), (CN2901, CN3501) | 4 |
| [6] | Main CBA | Fig. 9 | *4(L-4) | - |
| [7] | Front Loading Assembly | Fig. 10 | 2(S-5), *(P-1) | - |
| ① | ② | ③ | ④ | ⑤ |

**NOTE:**

①: Order of steps in Procedure
When reassembling, follow the steps in reverse order.
These numbers are also used as the identification (location) number of parts in Figures.

②: Part to be removed or installed.

③: Fig. No. Showing Procedure of Part Location.

④: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or desoldered.
S= Screw P= Spring L= Locking Tab CN=Connector
*= Unhook, Unlock, Release, Unplug or Desolder
2 (S-2) = two Screws (S-2)

⑤: Refer to "Reference Notes in the Table" following.

**Reference Notes in the Table**

1. Remove 4 Screws (S-2) or Remove 2 Screws (S-2), and slide the Bottom Plate in the direction of arrow while pushing 2 Locking Tabs (L-1).
   (Fig. 3), (Fig. 4)
2. Release 8 Locking Tabs (L-2), then Deck Holder can be removed. (Fig. 5)
   When releasing (L-2), first release the four tabs (A) on top, then the tab (B) on each side, and then the two tabs (C) at the bottom. (Fig. 5, Fig. 6)
   **CAUTION** Locking Tabs (L-2) are fragile. Be careful not to break them.
3. Release Locking Tab (L-3) and disconnect Connector (CN5501) to remove the Function CBA. (Fig. 7)
4. Remove 4 Screws (S-4), then slowly lift the Deck Assembly up. Lifting this Deck Assembly will disconnect 2 Connectors (CN2901, CN3501). (Fig. 8)

**Model No. 9A-027S**

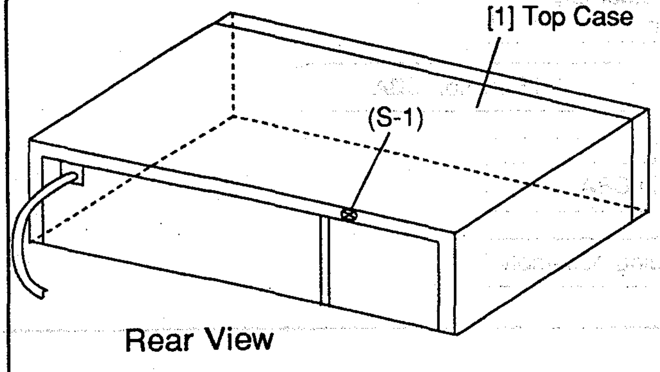

[1] Top Case
(S-1)
Rear View

Fig. 1

**Model No. 9A-027S**

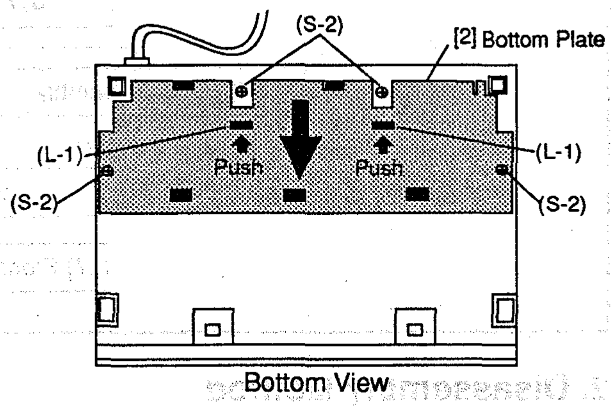

(S-2)
[2] Bottom Plate
(L-1)
(L-1)
Push
Push
(S-2)
(S-2)
Bottom View

Fig. 3

**Model No. 8A-007, 8A-027**

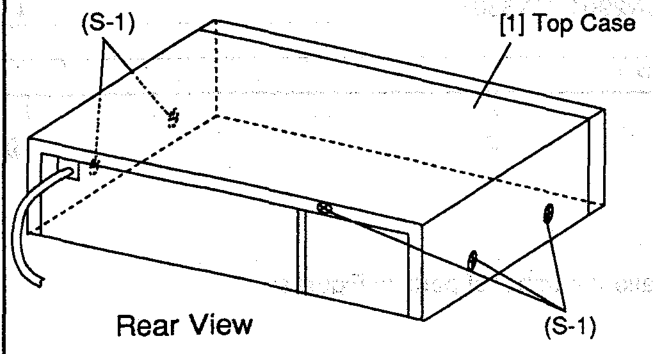

(S-1)
[1] Top Case
Rear View
(S-1)

Fig. 2

**Model No. 8A-007, 8A-027**

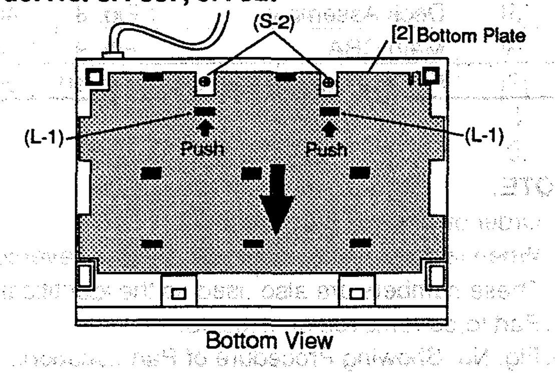

(S-2)
[2] Bottom Plate
(L-1)
(L-1)
Push
Push
Bottom View

Fig. 4

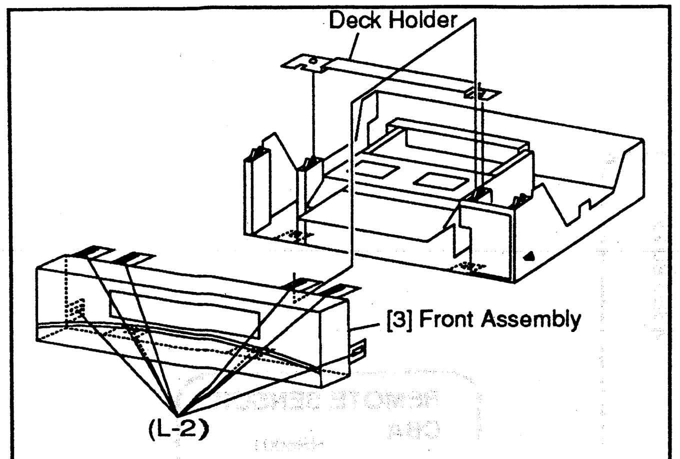

Deck Holder
[3] Front Assembly
(L-2)

Fig. 5

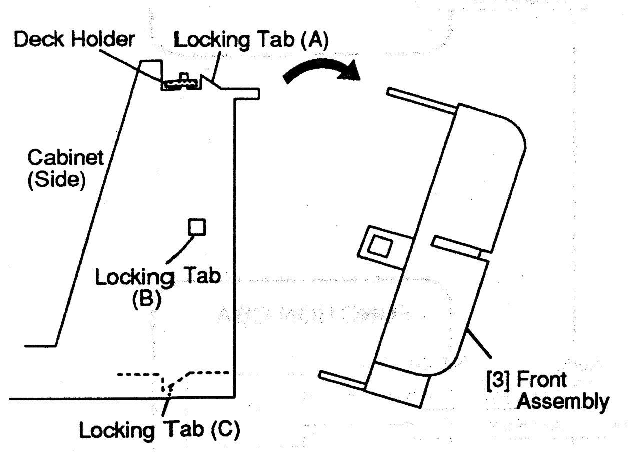

Deck Holder
Locking Tab (A)
Cabinet (Side)
Locking Tab (B)
Locking Tab (C)
[3] Front Assembly

Fig. 6

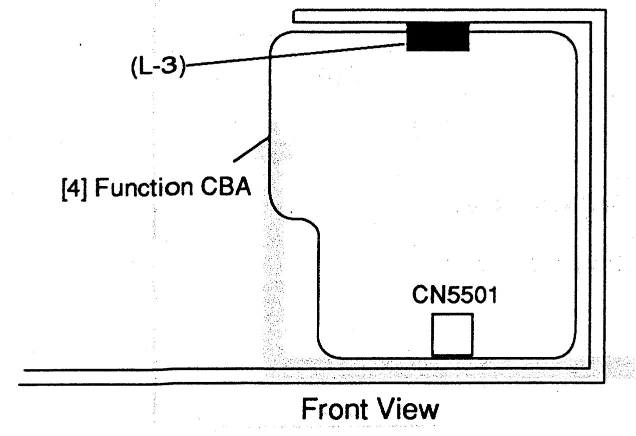

(L-3)
[4] Function CBA
CN5501
Front View

Fig. 7

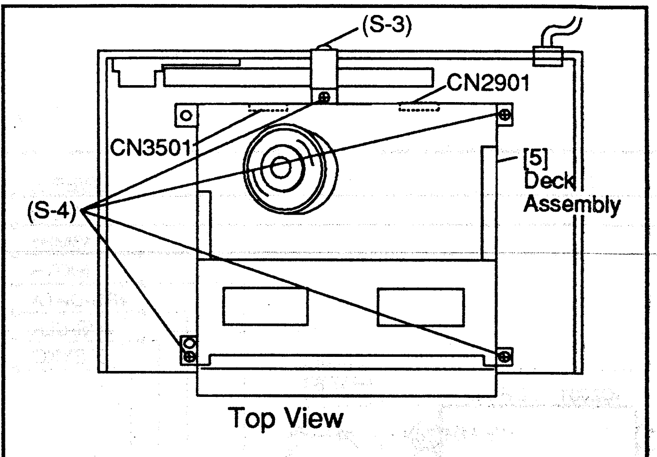

(S-3)
CN2901
CN3501
(S-4)
[5] Deck Assembly
Top View

Fig. 8

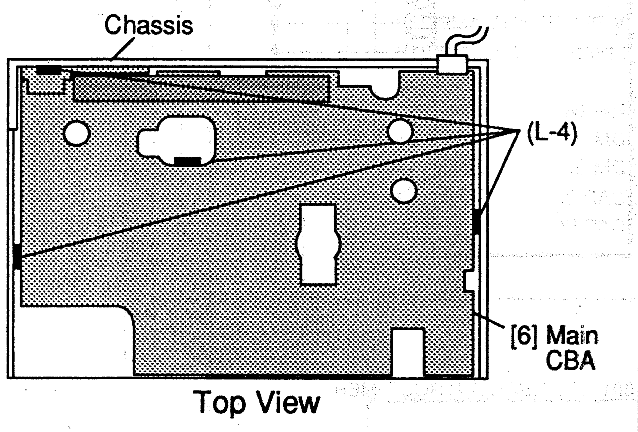

Chassis
(L-4)
[6] Main CBA
Top View

Fig. 9

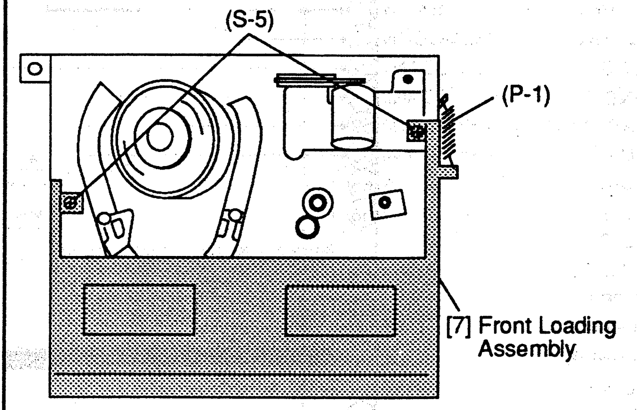
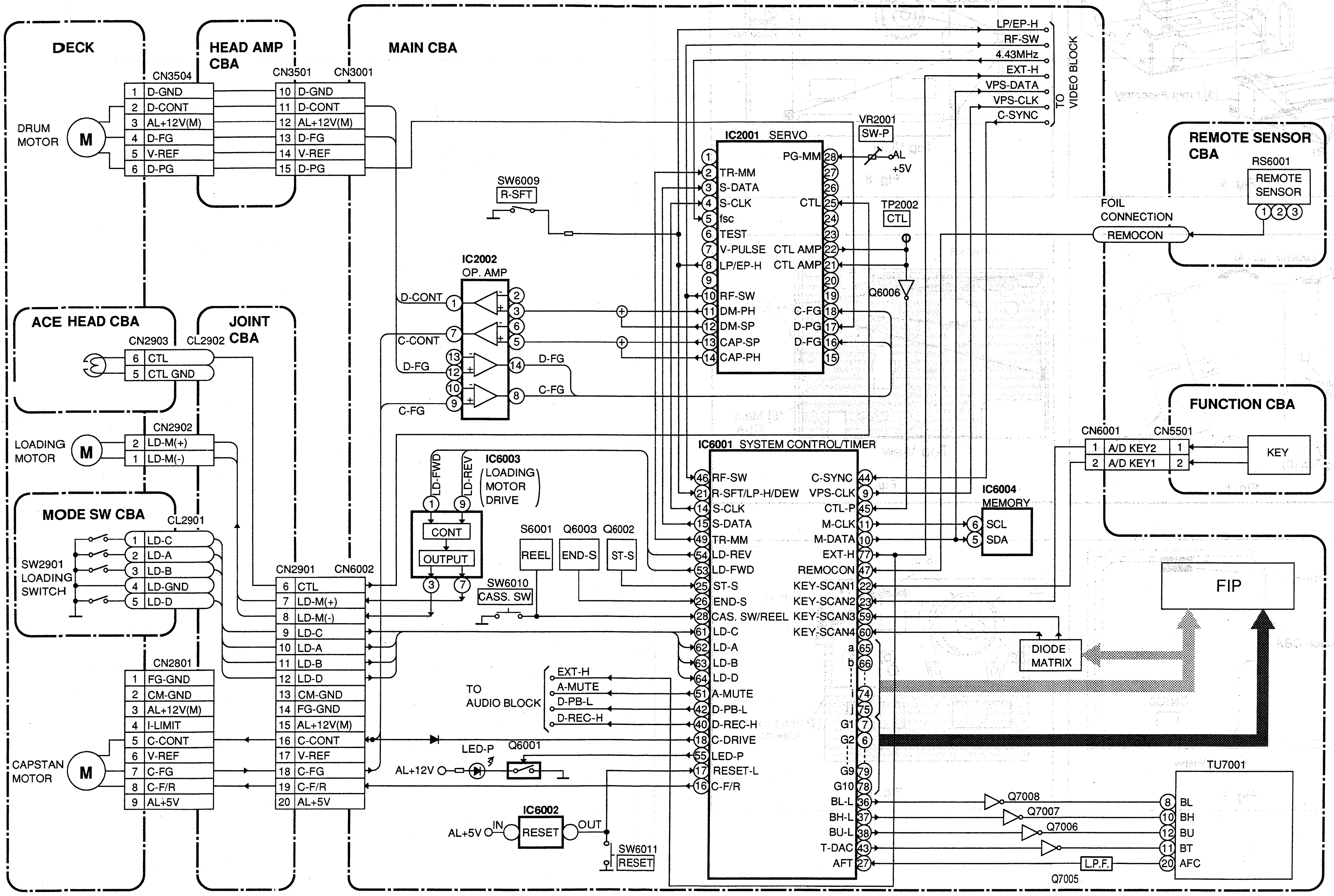

(S-5)
(P-1)
[7] Front Loading Assembly

Fig. 10

# BLOCK DIAGRAM

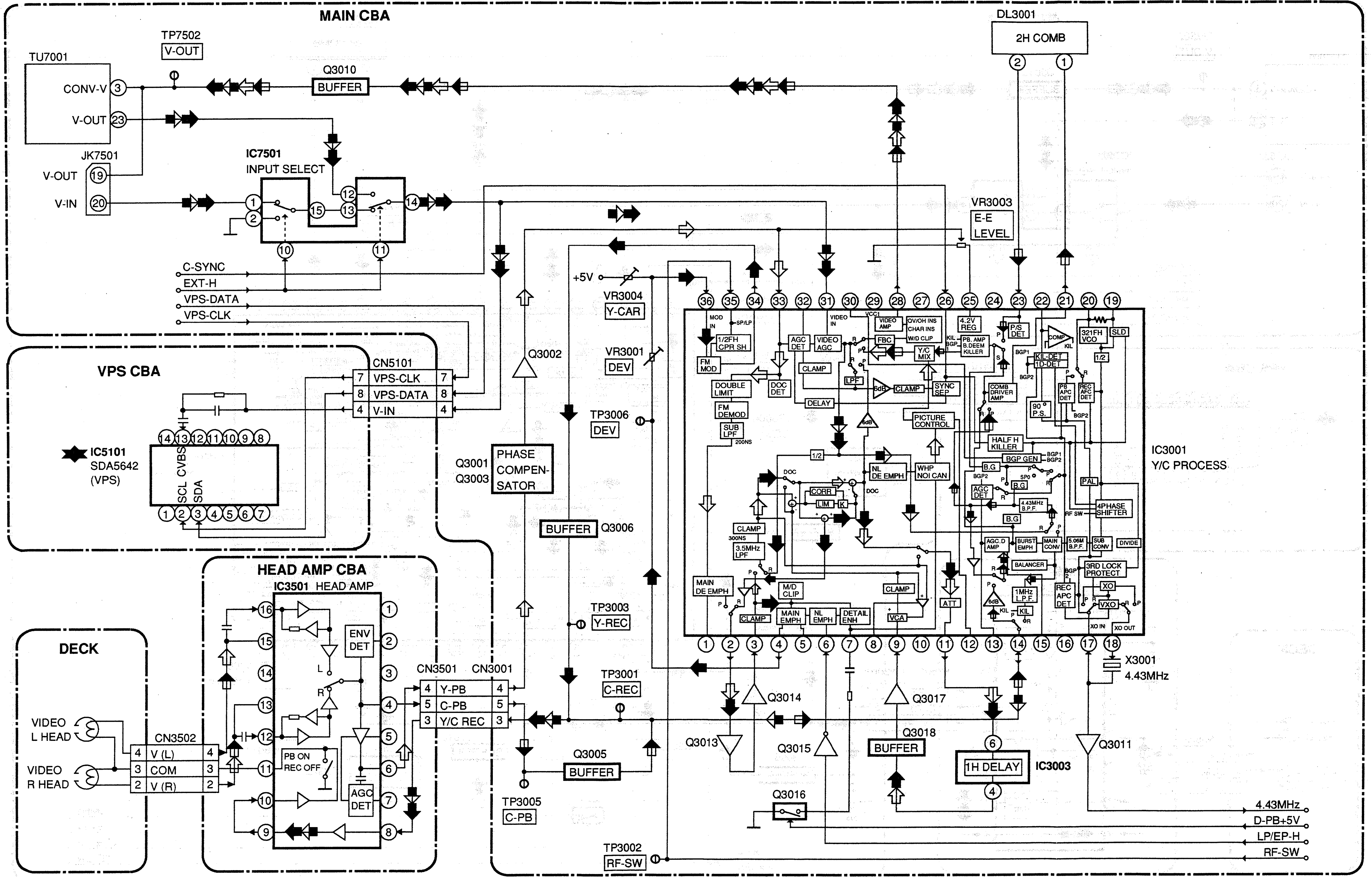
## Servo/System Control Block Diagram


DECK
HEAD AMP CBA
MAIN CBA
CN3504
CN3501
CN3001
1 D-GND
2 D-CONT
3 AL+12V(M)
4 D-FG
5 V-REF
6 D-PG
10 D-GND
11 D-CONT
12 AL+12V(M)
13 D-FG
14 V-REF
15 D-PG
DRUM MOTOR
M
ACE HEAD CBA
JOINT CBA
CN2903
CL2902
6 CTL
5 CTL GND
CN2902
LOADING MOTOR
2 LD-M(+)
1 LD-M(-)
MODE SW CBA
CL2901
SW2901 LOADING SWITCH
1 LD-C
2 LD-A
3 LD-B
4 LD-GND
5 LD-D
CN2801
1 FG-GND
2 CM-GND
3 AL+12V(M)
4 I-LIMIT
5 C-CONT
6 V-REF
7 C-FG
8 C-F/R
9 AL+5V
CAPSTAN MOTOR
CN2901
CN6002
6 CTL
7 LD-M(+)
8 LD-M(-)
9 LD-C
10 LD-A
11 LD-B
12 LD-D
13 CM-GND
14 FG-GND
15 AL+12V(M)
16 C-CONT
17 V-REF
18 C-FG
19 C-F/R
20 AL+5V
IC2002 OP. AMP
D-CONT
C-CONT
D-FG
C-FG
SW6009 R-SFT
IC2001 SERVO
1
2 TR-MM
3 S-DATA
4 S-CLK
5 fsc
6 TEST
7 V-PULSE
8 LP/EP-H
9
10 RF-SW
11 DM-PH
12 DM-SP
13 CAP-SP
14 CAP-PH
28 PG-MM
27
26
25 CTL
24
23
22 CTL AMP
21 CTL AMP
20
19
18 C-FG
17 D-PG
16 D-FG
15
VR2001 SW-P
AL +5V
TP2002 CTL
Q6006
LP/EP-H
RF-SW
4.43MHz
EXT-H
VPS-DATA
VPS-CLK
C-SYNC
TO VIDEO BLOCK
REMOTE SENSOR CBA
RS6001
REMOTE SENSOR
1 2 3
FOIL CONNECTION
REMOCON
FUNCTION CBA
CN6001
CN5501
1 A/D KEY2
2 A/D KEY1
KEY
IC6003 LOADING MOTOR DRIVE
LD-FWD
LD-REV
CONT
OUTPUT
S6001 REEL
Q6003 END-S
Q6002 ST-S
SW6010 CASS. SW
IC6001 SYSTEM CONTROL/TIMER
46 RF-SW
21 R-SFT/LP-H/DEW
14 S-CLK
15 S-DATA
49 TR-MM
54 LD-REV
53 LD-FWD
25 ST-S
26 END-S
28 CAS. SW/REEL
61 LD-C
62 LD-A
63 LD-B
64 LD-D
51 A-MUTE
42 D-PB-L
40 D-REC-H
18 C-DRIVE
55 LED-P
17 RESET-L
16 C-F/R
44 C-SYNC
9 VPS-CLK
45 CTL-P
11 M-CLK
10 M-DATA
77 EXT-H
47 REMOCON
22 KEY-SCAN1
23 KEY-SCAN2
59 KEY-SCAN3
60 KEY-SCAN4
65 a
66 b
74 i
75 j
7 G1
6 G2
79 G9
78 G10
36 BL-L
37 BH-L
38 BU-L
43 T-DAC
27 AFT
IC6004 MEMORY
6 SCL
5 SDA
FIP
DIODE MATRIX
TO AUDIO BLOCK
EXT-H
A-MUTE
D-PB-L
D-REC-H
LED-P
Q6001
AL+12V
IC6002
AL+5V
IN
RESET
OUT
SW6011 RESET
TU7001
Q7008
Q7007
Q7006
Q7005
L.P.F.
8 BL
10 BH
12 BU
11 BT
20 AFC

## Video Block Diagram (Models: 8A-007/8A-027)

REC-Y SIGNAL   REC-C SIGNAL   PB-Y SIGNAL   PB-C SIGNAL   Mode : SP/REC

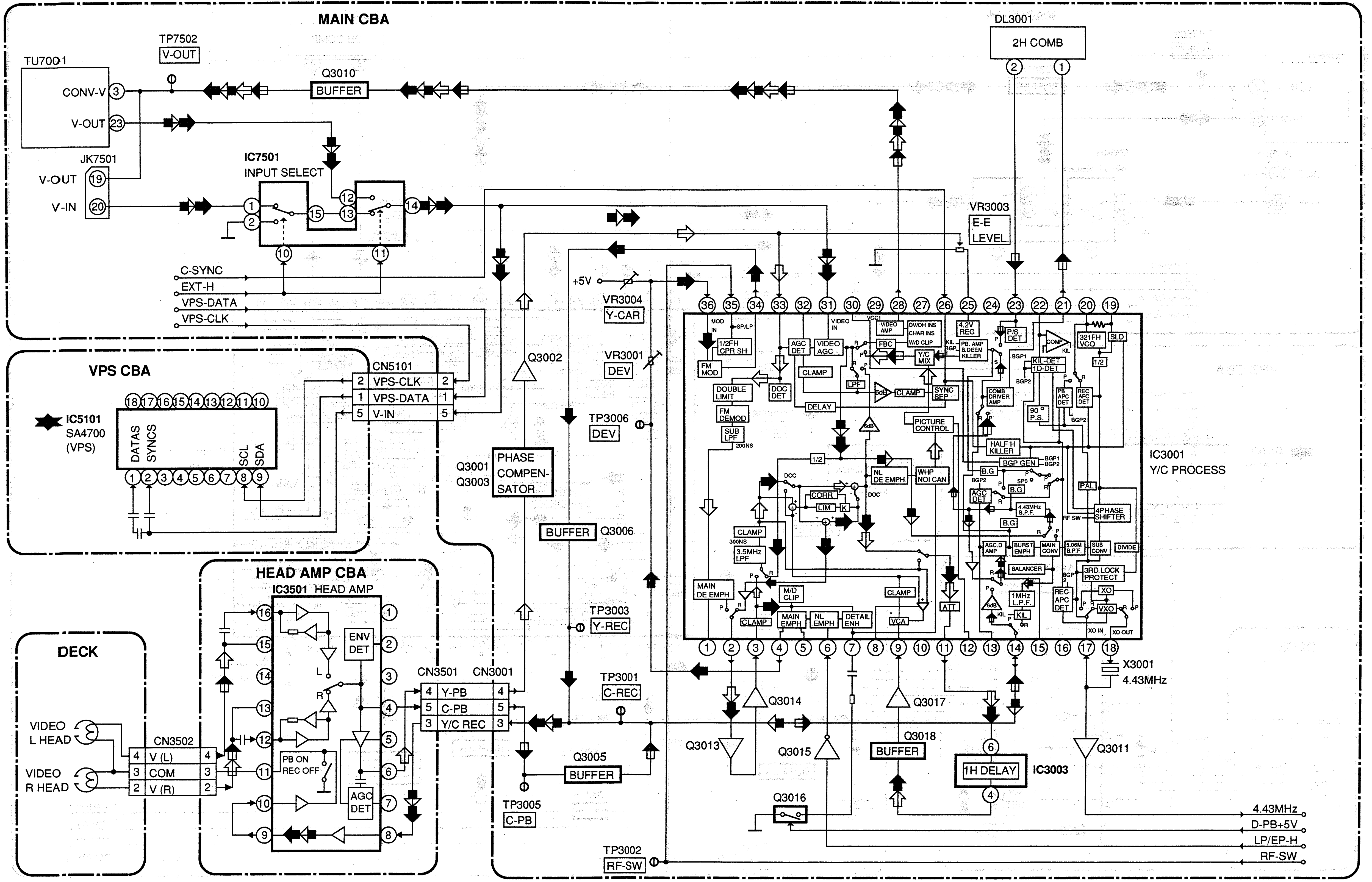
**IC5101 can be either SA4700 or SDA5642.This chart shows the latter case.**


MAIN CBA
TU7001
CONV-V 3
V-OUT 23
TP7502 V-OUT
Q3010 BUFFER
JK7501
V-OUT 19
V-IN 20
IC7501 INPUT SELECT
C-SYNC
EXT-H
VPS-DATA
VPS-CLK
DL3001 2H COMB
VR3003 E-E LEVEL
+5V
VR3004 Y-CAR
VR3001 DEV
TP3006 DEV
Q3002
Q3001 Q3003 PHASE COMPEN-SATOR
BUFFER Q3006
TP3003 Y-REC
TP3001 C-REC
Q3005 BUFFER
TP3005 C-PB
TP3002 RF-SW
IC3001 Y/C PROCESS
MOD IN
SP/LP
1/2FH CPR SH
FM MOD
DOUBLE LIMIT
FM DEMOD
SUB LPF
200NS
AGC DET
VIDEO AGC
VIDEO IN
VCC1
VIDEO AMP
OV/OH INS CHAR INS
W/D CLIP
FBC
Y/C MIX
CLAMP
DOC DET
LPF
DELAY
SYNC SEP
PICTURE CONTROL
4.2V REG
KIL BGP
PB. AMP B.DEEM KILLER
P/S DET
COMP
KIL-DET 1D-DET
321FH VCO
SLD
1/2
COMB DRIVER AMP
PB APC DET
REC AFC DET
90 P.S.
HALF H KILLER
BGP GEN
B.G
AGC DET
4.43MHz B.P.F.
PAL
4PHASE SHIFTER
RF SW
AGC.D AMP
BURST EMPH
MAIN CONV
5.06M B.P.F.
SUB CONV
DIVIDE
BALANCER
3RD LOCK PROTECT
XO
VXO
REC APC DET
1MHz L.P.F.
KIL
XO IN
XO OUT
1/2
NL DE EMPH
WHP NOI CAN
DOC
CORR
LIM
CLAMP
300NS
3.5MHz LPF
MAIN DE EMPH
M/D CLIP
CLAMP
MAIN EMPH
NL EMPH
DETAIL ENH
VCA
ATT
6dB
Q3014
Q3013
Q3015
Q3016
Q3017
Q3018 BUFFER
IC3003 1H DELAY
Q3011
X3001 4.43MHz
4.43MHz
D-PB+5V
LP/EP-H
RF-SW
VPS CBA
CN5101
7 VPS-CLK 7
8 VPS-DATA 8
4 V-IN 4
IC5101 SDA5642 (VPS)
SCL CVBS SDA
HEAD AMP CBA
IC3501 HEAD AMP
ENV DET
PB ON REC OFF
AGC DET
CN3501 CN3001
4 Y-PB 4
5 C-PB 5
3 Y/C REC 3
DECK
VIDEO L HEAD
VIDEO R HEAD
CN3502
4 V (L) 4
3 COM 3
2 V (R) 2

# Video Block Diagram (Models: 8A-007/8A-027)

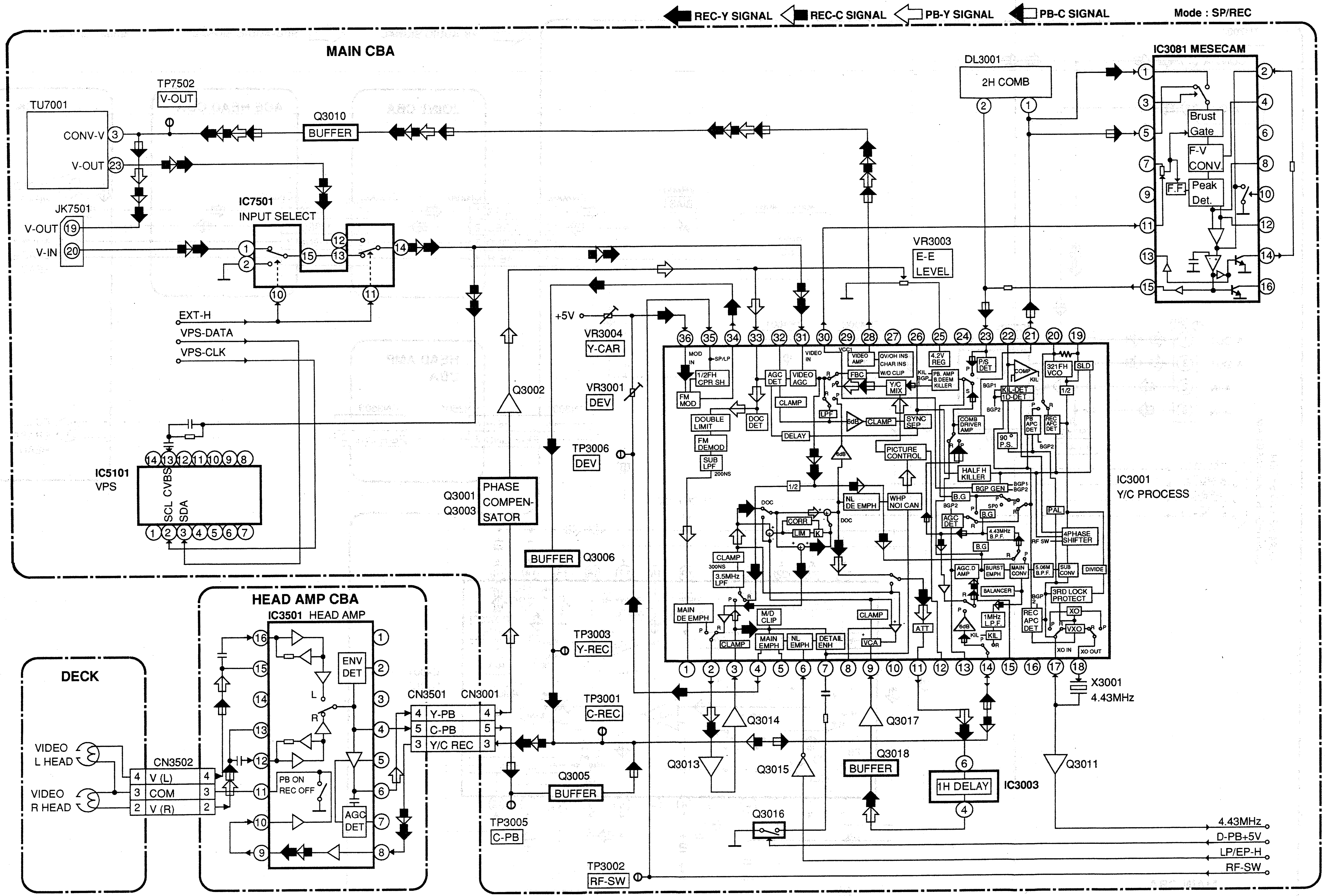
REC-Y SIGNAL REC-C SIGNAL PB-Y SIGNAL PB-C SIGNAL Mode : SP/REC

**IC5101 can be either SA4700 or SDA5642.This chart shows the former case.**

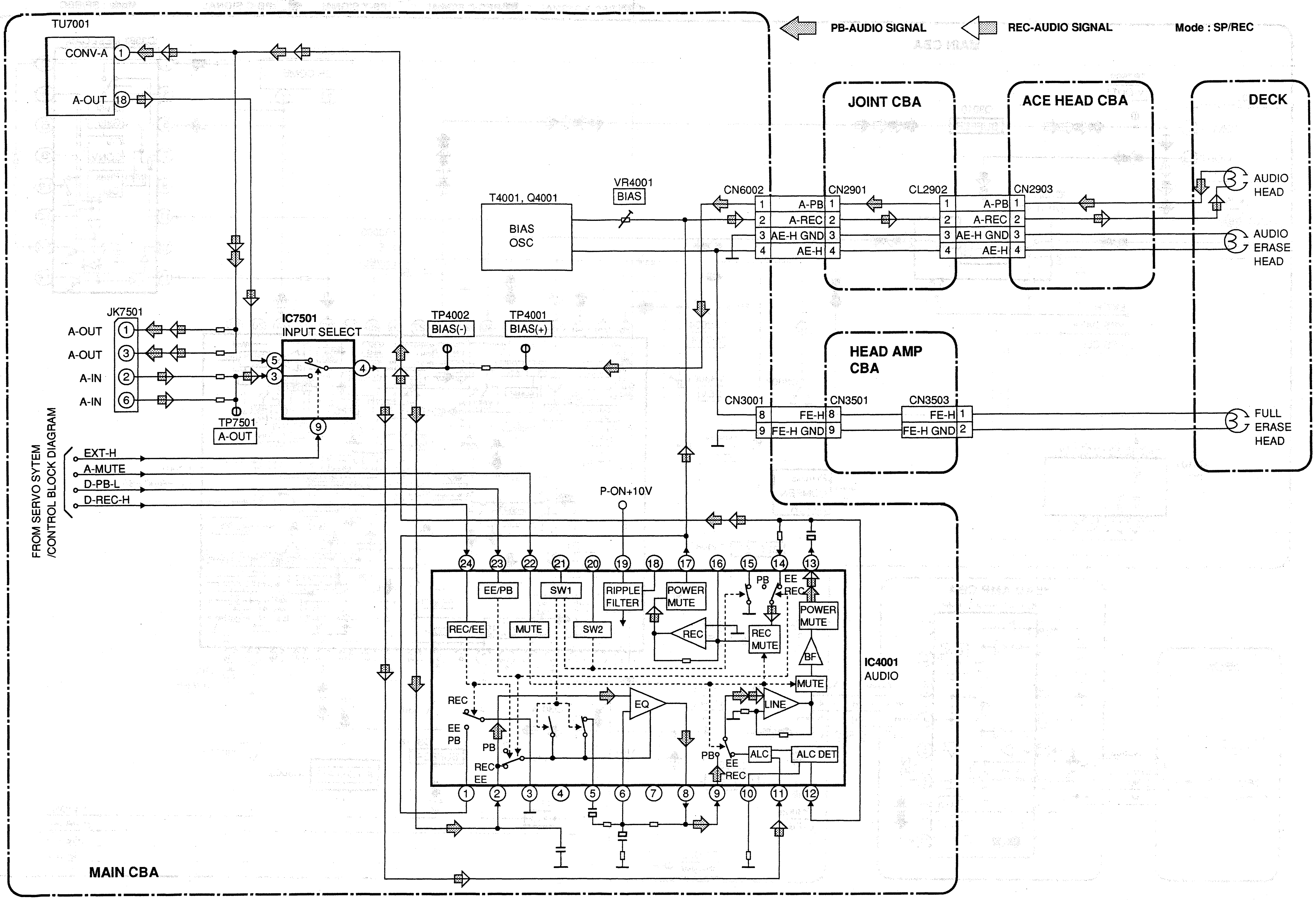


MAIN CBA
TU7001
CONV-V
V-OUT
TP7502
V-OUT
Q3010
BUFFER
DL3001
2H COMB
JK7501
V-OUT
V-IN
IC7501
INPUT SELECT
C-SYNC
EXT-H
VPS-DATA
VPS-CLK
VR3003
E-E LEVEL
+5V
VR3004
Y-CAR
VR3001
DEV
TP3006
DEV
Q3002
PHASE COMPEN-SATOR
Q3001
Q3003
BUFFER
Q3006
TP3003
Y-REC
TP3001
C-REC
Q3005
BUFFER
TP3005
C-PB
TP3002
RF-SW
VPS CBA
CN5101
VPS-CLK
VPS-DATA
V-IN
IC5101
SA4700
(VPS)
DATAS
SYNCS
SCL
SDA
HEAD AMP CBA
IC3501 HEAD AMP
ENV DET
PB ON
REC OFF
AGC DET
DECK
VIDEO L HEAD
VIDEO R HEAD
CN3502
V (L)
COM
V (R)
CN3501
CN3001
Y-PB
C-PB
Y/C REC
IC3001
Y/C PROCESS
MOD IN
SP/LP
1/2FH CPR SH
FM MOD
DOUBLE LIMIT
FM DEMOD
SUB LPF
VIDEO IN
AGC DET
VIDEO AGC
DOC DET
CLAMP
DELAY
LPF
VIDEO AMP
FBC
Y/C MIX
OV/OH INS
CHAR INS
W/O CLIP
SYNC SEP
PICTURE CONTROL
4.2V REG
PB. AMP
B.DEEM
KILLER
P/S DET
COMP
KIL-DET
1D-DET
321FH VCO
SLD
1/2
COMB DRIVER AMP
PB APC DET
REC AFC DET
90° P.S.
HALF H KILLER
BGP GEN
B.G
AGC DET
4.43MHz B.P.F.
PAL
4PHASE SHIFTER
RF SW
AGC D AMP
BURST EMPH
MAIN CONV
5.06M B.P.F.
SUB CONV
DIVIDE
BALANCER
3RD LOCK PROTECT
1MHz L.P.F.
KIL
REC APC DET
XO
VXO
XO IN
XO OUT
NL DE EMPH
WHP NOI CAN
CORR
LIM
3.5MHz LPF
MAIN DE EMPH
M/D CLIP
MAIN EMPH
NL EMPH
DETAIL ENH
VCA
ATT
6dB
X3001
4.43MHz
Q3014
Q3013
Q3015
Q3017
Q3018
BUFFER
Q3016
1H DELAY
IC3003
Q3011
4.43MHz
D-PB+5V
LP/EP-H
RF-SW

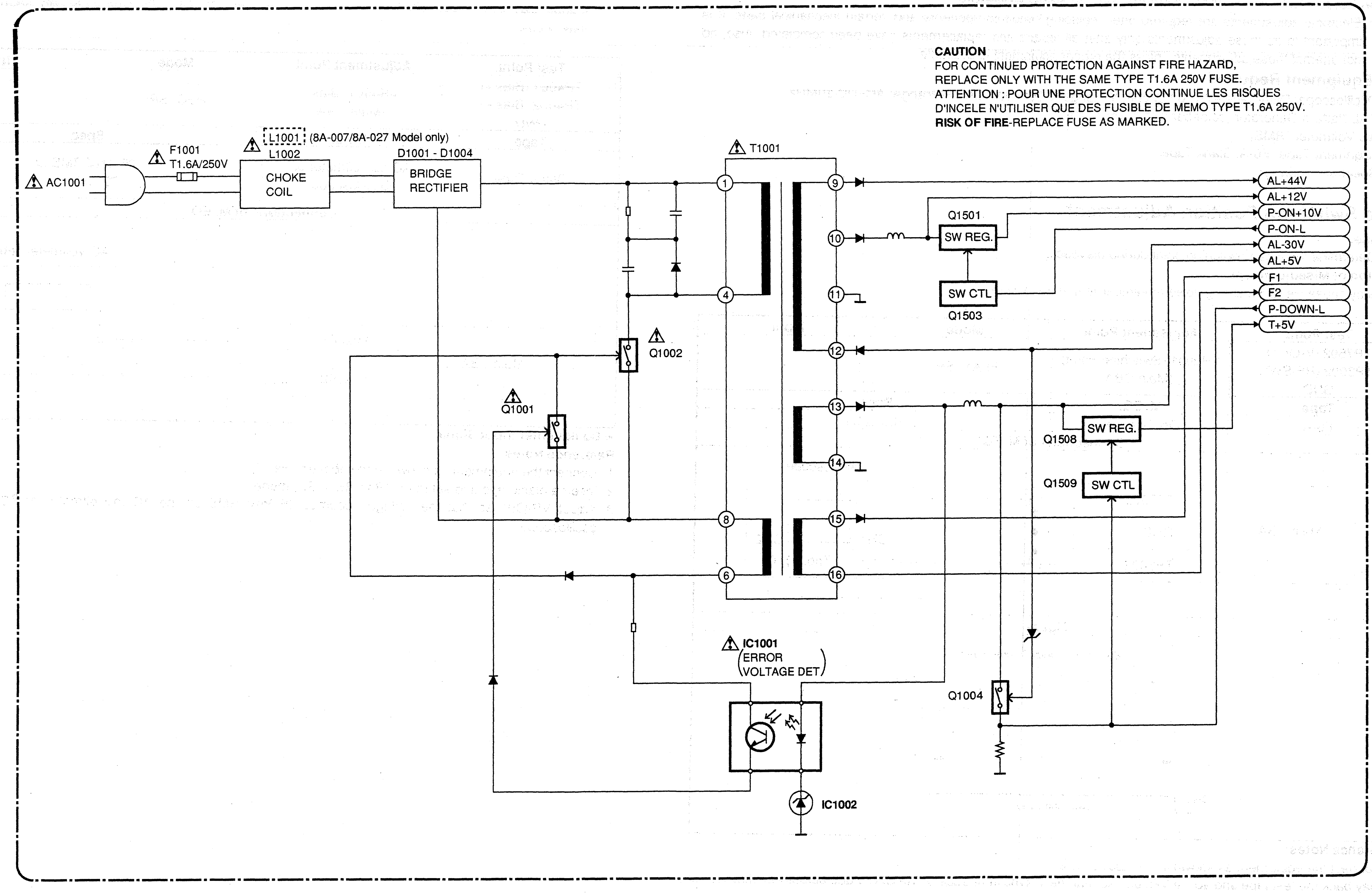
# Video Block Diagram (Model:9A-027S)


REC-Y SIGNAL
REC-C SIGNAL
PB-Y SIGNAL
PB-C SIGNAL
Mode : SP/REC
MAIN CBA
TU7001
CONV-V
V-OUT
TP7502
V-OUT
Q3010
BUFFER
JK7501
V-OUT
V-IN
IC7501
INPUT SELECT
EXT-H
VPS-DATA
VPS-CLK
IC5101
VPS
SCL
SDA
CVBS
Q3002
Q3001
Q3003
PHASE COMPEN-SATOR
BUFFER
Q3006
+5V
VR3004
Y-CAR
VR3001
DEV
TP3006
DEV
TP3003
Y-REC
TP3001
C-REC
TP3005
C-PB
Q3005
BUFFER
TP3002
RF-SW
VR3003
E-E LEVEL
DL3001
2H COMB
IC3081 MESECAM
Brust Gate
F-V CONV.
F.F.
Peak Det.
IC3001
Y/C PROCESS
Q3014
Q3013
Q3015
Q3016
Q3017
Q3018
BUFFER
1H DELAY
IC3003
Q3011
X3001
4.43MHz
4.43MHz
D-PB+5V
LP/EP-H
RF-SW
HEAD AMP CBA
IC3501 HEAD AMP
ENV DET
PB ON REC OFF
AGC DET
CN3501
CN3001
Y-PB
C-PB
Y/C REC
DECK
VIDEO L HEAD
VIDEO R HEAD
CN3502
V (L)
COM
V (R)
1/2FH CPR SH
FM MOD
DOUBLE LIMIT
FM DEMOD
SUB LPF
AGC DET
VIDEO AGC
CLAMP
DOC DET
DELAY
LPF
VIDEO AMP
FBC
Y/C MIX
SYNC SEP
PICTURE CONTROL
OV/OH INS CHAR INS
W/D CLIP
4.2V REG
P/S DET
COMP
321FH VCO
SLD
KIL-DET
1D-DET
COMB DRIVER AMP
90° P.S.
PB APC DET
REC APC DET
HALF H KILLER
BGP GEN
B.G
AGC DET
4.43MHz B.P.F.
4PHASE SHIFTER
PAL
NL DE EMPH
WHP NOI CAN
CORR
LIM
CLAMP
3.5MHz LPF
MAIN DE EMPH
M/D CLIP
MAIN EMPH
NL EMPH
DETAIL ENH
VCA
CLAMP
ATT
AGC.D AMP
BURST EMPH
MAIN CONV
5.06M B.P.F.
SUB CONV
DIVIDE
BALANCER
3RD LOCK PROTECT
1MHz L.P.F.
KIL
REC APC DET
XO
VXO
XO IN
XO OUT

# Audio Block Diagram


PB-AUDIO SIGNAL
REC-AUDIO SIGNAL
Mode : SP/REC
TU7001
CONV-A
A-OUT
1
18
JK7501
A-OUT
A-OUT
A-IN
A-IN
TP7501
A-OUT
IC7501
INPUT SELECT
FROM SERVO SYTEM
/CONTROL BLOCK DIAGRAM
EXT-H
A-MUTE
D-PB-L
D-REC-H
T4001, Q4001
BIAS
OSC
VR4001
BIAS
TP4002
BIAS(-)
TP4001
BIAS(+)
P-ON+10V
CN6002
A-PB
A-REC
AE-H GND
AE-H
CN3001
FE-H
FE-H GND
JOINT CBA
CN2901
CL2902
ACE HEAD CBA
CN2903
A-PB
A-REC
AE-H GND
AE-H
DECK
AUDIO
HEAD
AUDIO
ERASE
HEAD
HEAD AMP
CBA
CN3501
CN3503
FE-H
FE-H GND
FULL
ERASE
HEAD
EE/PB
SW1
RIPPLE
FILTER
POWER
MUTE
REC/EE
MUTE
SW2
REC
PB
EE
REC
REC
MUTE
POWER
MUTE
BF
MUTE
EQ
LINE
ALC
ALC DET
REC
EE
PB
PB
REC
EE
PB
EE
REC
IC4001
AUDIO
MAIN CBA

## Power Supply Block Diagram


AC1001
F1001
T1.6A/250V
L1001 (8A-007/8A-027 Model only)
L1002
CHOKE COIL
D1001 - D1004
BRIDGE RECTIFIER
T1001
1
4
8
6
9
10
11
12
13
14
15
16
Q1501
SW REG.
SW CTL
Q1503
Q1002
Q1001
Q1508
SW REG.
Q1509
SW CTL
Q1004
IC1001
ERROR VOLTAGE DET
IC1002
AL+44V
AL+12V
P-ON+10V
P-ON-L
AL-30V
AL+5V
F1
F2
P-DOWN-L
T+5V

**CAUTION**
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE T1.6A 250V FUSE.
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES
D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE T1.6A 250V.
**RISK OF FIRE**-REPLACE FUSE AS MARKED.

# ELECTRICAL ADJUSTMENT INSTRUCTIONS

**General Note: "CBA" is an abbreviation for "Circuit Board Assembly".**

**NOTE:** Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

## Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe, V-Range: 0.001~50V/Div., F-Frange: AC~DC-20MHz
2. PAL Pattern Generator (color bar with 100% white)
3. AC Voltmeter (RMS)
4. Alignment Tape (F6-A, Blank Tape)
5. Spectrum Analyzer

## Head Switching Position Adjustment

**Purpose:**

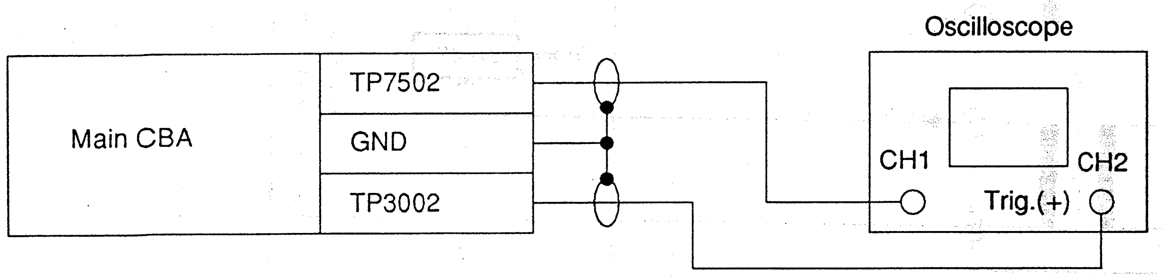
Determine the Head Switching point during playback.

**Sympton of Misadjustment:**

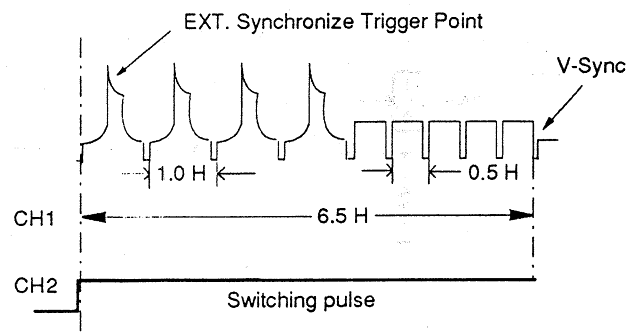
May cause Head Switching noise or vertical jitter in the picture.

| Test Point | Adjustment Point | Mode | Input |
|---|---|---|---|
| TP7502 (V-OUT)<br>TP3002 (RF-SW)<br>GND | VR2001 (Switching Point)<br>(Main CBA) | PLAY (SP) | ---- |
| **Tape** | **M. EQ.** | **Spec.** | |
| F6-A | Oscilloscope | 6.5H±1H | |

**Connections of M. EQ.**



**Figure**



**Reference Notes:**

1. Connect the equipment as shown in the above table.
2. Play back the test tape and adjust VR2001 so that the V-sync front edge of the CH1 video output waveform is out the 6.5H(412.7µs) delayed position from the rising edge of the CH2 head switching pulse waveform.

## Audio Rec. Bias Current Adjustment

**Purpose:**

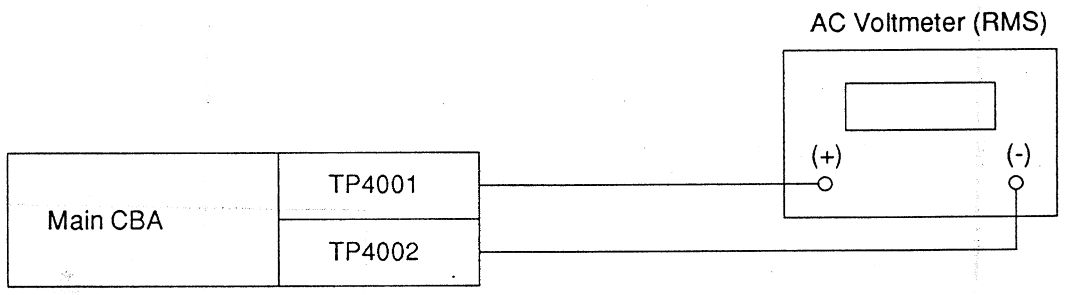
Set optimum record audio bias level.

**Sympton of Misadjustment:**

If audio bias level is too high, the frequency response deteriorates. If the level is too low, sound distortion may occur.

| Test Point | Adjustment Point | Mode | Input |
|---|---|---|---|
| TP4001 (Bias +)<br>TP4002 (Bias –)<br>GND | VR4001 (Bias)<br>(Main CBA) | REC (SP) | ---- |
| **Tape** | **M. EQ.** | **Spec.** | |
| Blank Tape | AC milivoltmeter or Oscilloscope | 25.0mV RMS or 70.7mVp-p | |

**Connections of M. EQ.**



**✳ Do not enter Input Signal.**

**Reference Notes:**

1. Connect the equipment as shown in the above table.
2. Insert a blank tape and set the VCR to REC (SP) mode.
3. Adjust VR4001 so that the voltage becomes 25.0mV RMS on the AC milivoltmeter or 70.7mVp-p on the oscilloscope.

## V-Out Level Adjustment

**Purpose:**

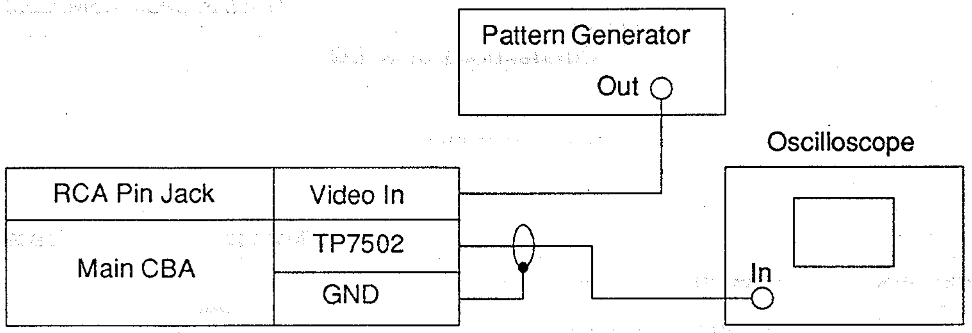
Set optimum luminance v-out level.

**Sympton of Misadjustment:**

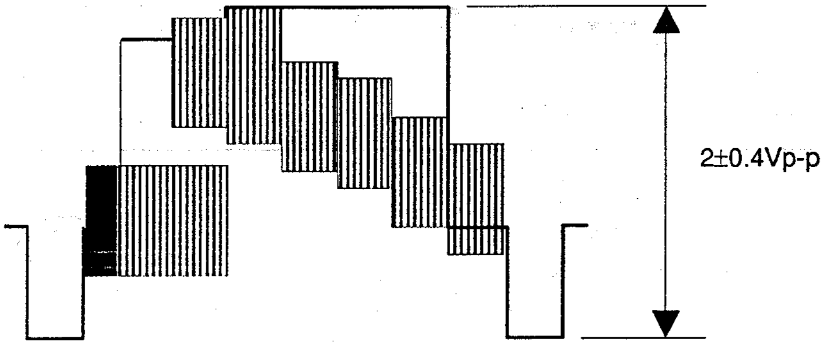
If the v-out level is too high, TV may overload. If the level is too low, the S/N ratio deteriorates.

| Test Point | Adjustment Point | Mode | Input |
|---|---|---|---|
| TP7502 (V-Out)<br>GND | VR3003 (E-E Level)<br>(Main CBA) | E-E | Color Bar Signal<br>with 100% white |
| **Tape** | **M. EQ.** | **Spec.** | |
| ----- | Pattern Generator<br>Oscilloscope | 2±0.4Vp-p | |

**Connections of M. EQ.**


Pattern Generator
Out
Oscilloscope
RCA Pin Jack
Video In
Main CBA
TP7502
GND
In

**Figure**



**Reference Notes:**

1. Connect the equipment as shown in the above table.
2. Input the color bar signal with 100% white to video input.
3. Adjust VR3003 so that the video level becomes 2±0.4Vp-p. (Connected to TV)

# FM Carrier Deviation Adjustment

**Purpose:**

To align FM carrier deviation.

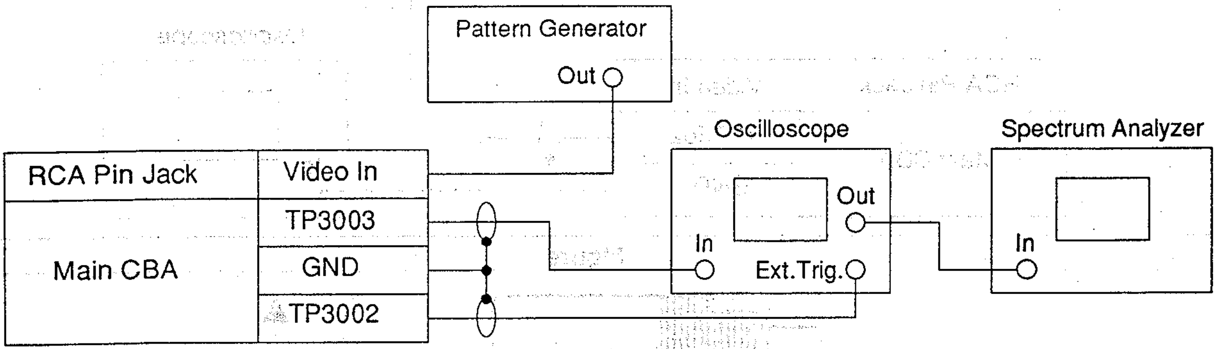
**Sympton of Misadjustment:**

If the deviation is not correct, abnormal contrast of light and dark on the picture may be seen.

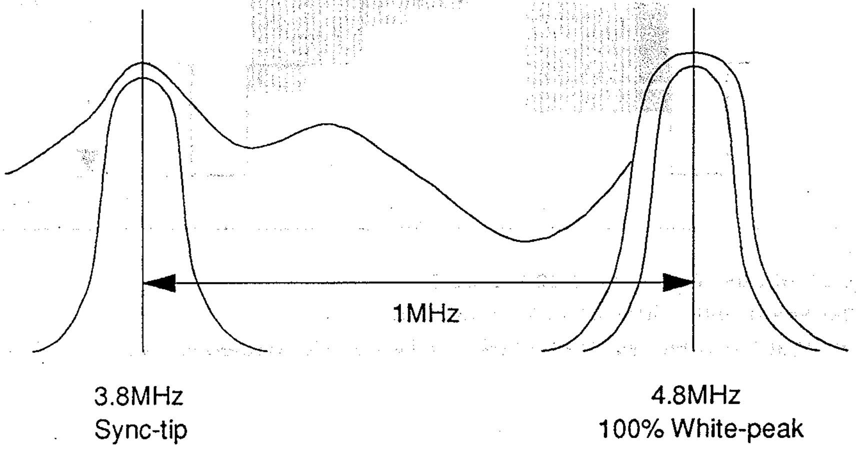
If the carrier deviation is not correct, beats apper on the picture.

| Test Point | Adjustment Point | Mode | Input |
|---|---|---|---|
| TP3003 (Y-REC)<br>TP3002 (RF-SW) | VR3001 (Deviation)<br>(Main CBA)<br>VR3004 (Carrier)<br>(Main CBA) | REC (SP) | Color Bar signal with 100% white |
| **Tape** | **M. EQ.** | **Spec.** | |
| Blank Tape | Pattern Generator<br>Spectrum Analyzer<br>Oscilloscope | Sync-tip 3.8MHz±0.1MHz<br>100% white peak 4.8MHz±0.1MHz | |

**Connections of M. EQ.**


Pattern Generator
Out
Oscilloscope
Spectrum Analyzer
RCA Pin Jack
Video In
Main CBA
TP3003
GND
TP3002
Out
In
Ext.Trig.
In

**Figure**


1MHz
3.8MHz
Sync-tip
4.8MHz
100% White-peak

**Reference Notes:**

1. Connect the equipment as shown in the above table.
2. Input color bar signal with 100% white to video input.
3. Adjust Sync-tip to 3.8MHz± 0.1MHz by VR3004, White-peak for 4.8MHz±0.1MHz by VR3001.

# SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

## Standard Notes

### WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Capacitor Temperature Markings

| Mark | Capacity change rate | Standard temperature | Temperature range |
|---|---|---|---|
| (B) | ±10% | 20°C | -25~+85°C |
| (F) | +30 -80% | 20°C | -25~+85°C |
| (SR) | ±15% | 20°C | -25~+85°C |
| (Z) | +30 -80% | 20°C | -10~+70°C |

## Note:

1 Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.

2 All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).

3 Resistor wattages are 1/5W or 1/6W unless otherwise specified.

4 All capacitance values are indicated in µF ($P=10^{-6}\mu F$).

5 All voltages are DC voltages unless otherwise specified.

6 Electrical parts such as capacitors, connectors, diodes, IC's, transistors, resistors, switches, and fuses are identified by four digits. The first two digits are not shown for each component. In each block of the diagram, there is a note such as shown below to indicate these abbreviated two digits.

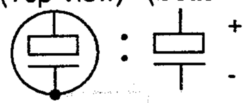
**TUNER BLOCK SYMBOL NO. 70****

Example: "C08" in this "TUNER BLOCK" is C7008.

Capacitors and transistors are represented by the following symbols.

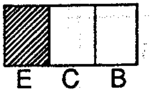
CBA Symbols

(Top View) (Bottom View)



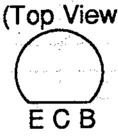
: Electrolytic Capacitor

(Bottom View)



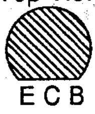
: Transistor or Digital Transistor

(Top View)



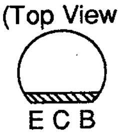
NPN Transistor

(Top View)



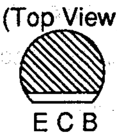
PNP Transistor

(Top View)



NPN Digital Transistor

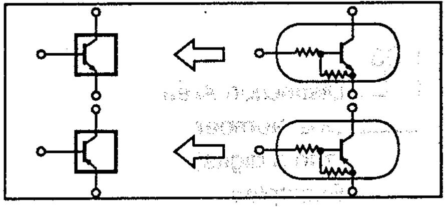
(Top View)



PNP Digital Transistor

Schematic Diagram Symbols

Digital Transistor



## LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. **CAUTION:**
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE T1.6A 250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE T1.6A 250V.
RISK OF FIRE-REPLACE FUSE AS MARKED.

2. **CAUTION:**
Voltage selectable power supply circuit is used in this unit.
If Main Fuse (F01) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

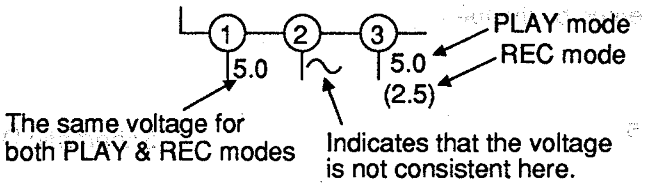
3. **Note:**
(1)Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
(2)To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Wire Connectors
(1)Prefix symbol "CN" means "connector." (Can disconnect and reconnect)
(2)Prefix symbol "CL" means "wire-solder holes of the PCB." (Wire is soldered directly.)

5. Note: Mark "•" is a leadless (chip) component.

6. Mode: SP/REC

7. Voltage indications for PLAY and REC modes on the Schematics are as shown below:

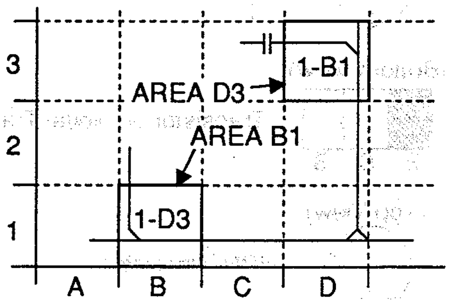


1
2
3
5.0
~
5.0
(2.5)
PLAY mode
REC mode
The same voltage for both PLAY & REC modes
Indicates that the voltage is not consistent here.

**Unit: Volts**

8. How to read converged lines

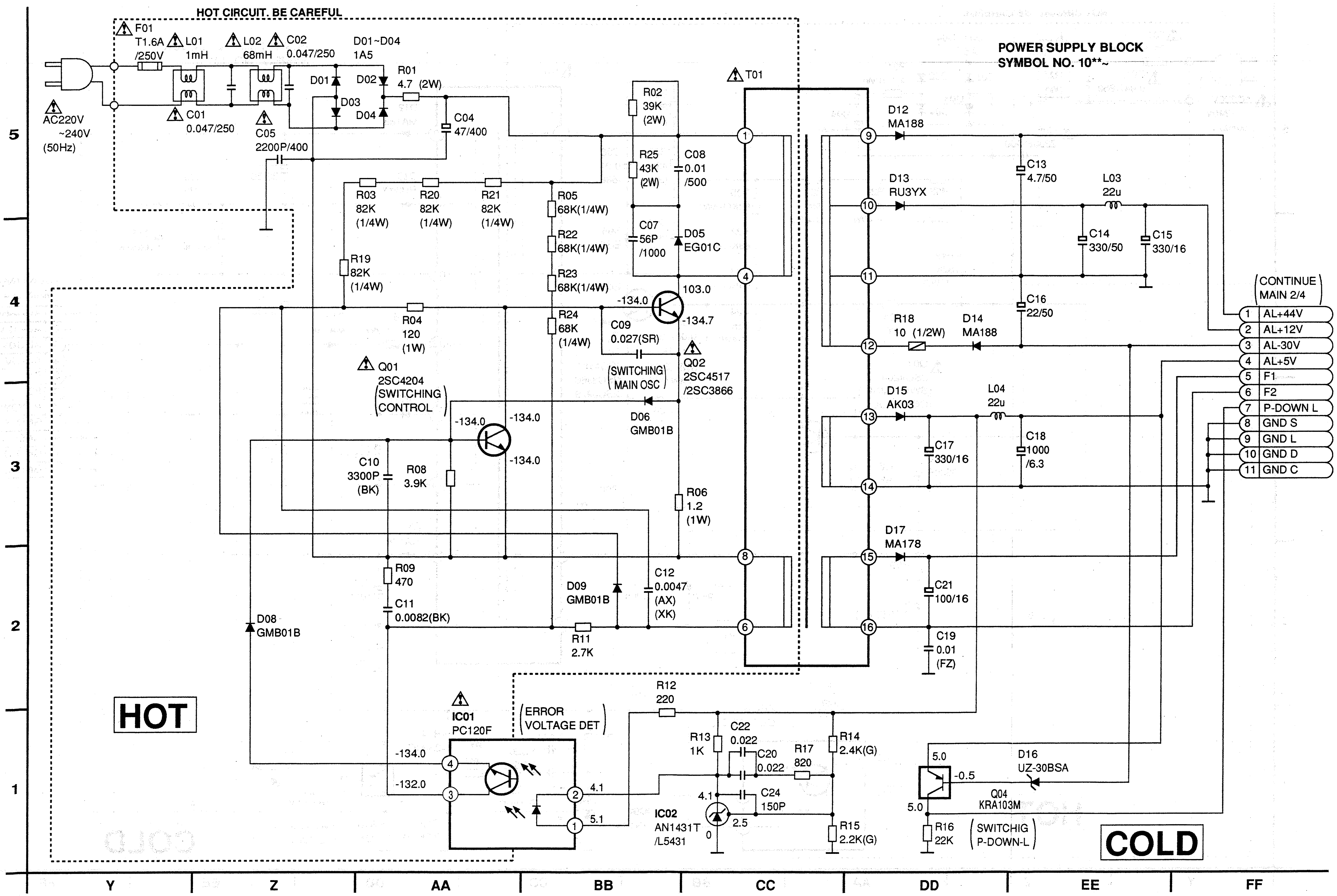
1-D3
Distinction Area
Line Number
(1 to 3 digits)
Examples:
1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



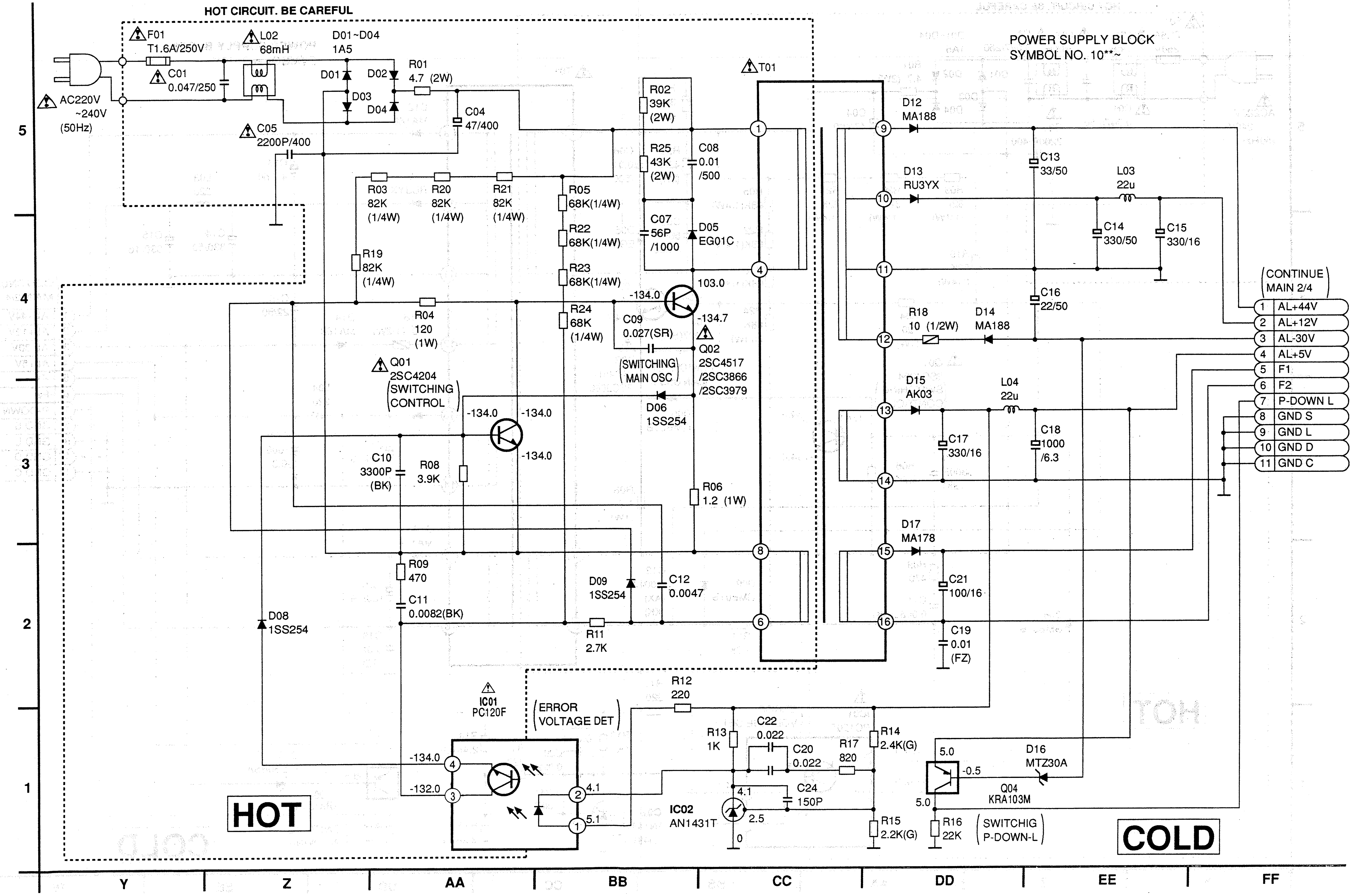
9. Test Point Information

⦶ : Indicates a test point with a jumper wire across a hole in the PCB.
▭➔ : Used to indicate a test point with a component lead on foil side.
▨ : Used to indicate a test point with no test pin.
● : Used to indicate a test point with a test pin.

# Main 4/4 Schematic Diagram (8A-007/8A-027)

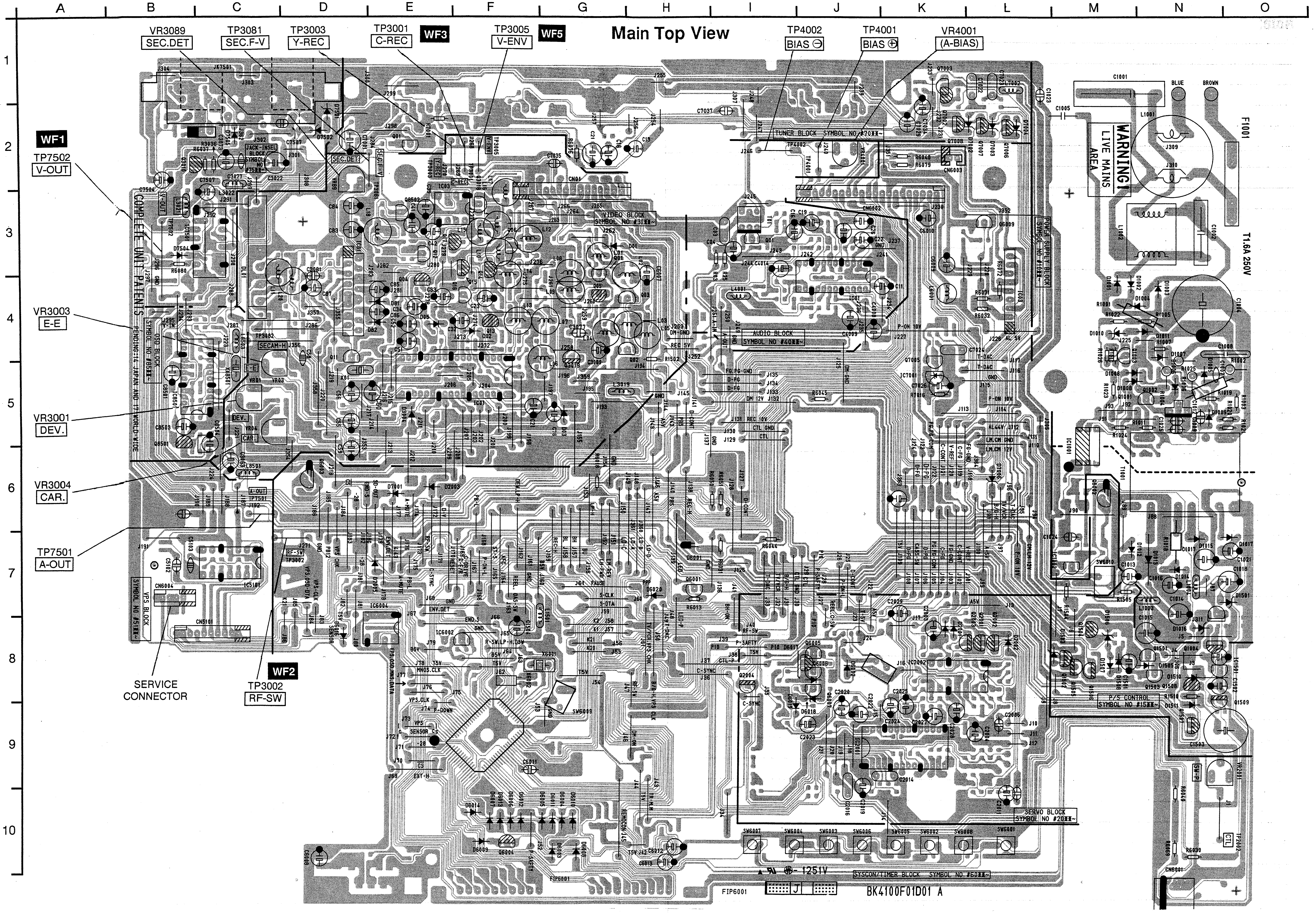

HOT CIRCUIT. BE CAREFUL
F01
T1.6A
/250V
L01
1mH
L02
68mH
C02
0.047/250
D01~D04
1A5
AC220V
~240V
(50Hz)
C01
0.047/250
C05
2200P/400
D01
D02
D03
D04
R01
4.7 (2W)
C04
47/400
R02
39K
(2W)
R25
43K
(2W)
C08
0.01
/500
C07
56P
/1000
D05
EG01C
T01
R03
82K
(1/4W)
R20
82K
(1/4W)
R21
82K
(1/4W)
R05
68K(1/4W)
R22
68K(1/4W)
R23
68K(1/4W)
R24
68K
(1/4W)
R19
82K
(1/4W)
R04
120
(1W)
-134.0
103.0
-134.7
C09
0.027(SR)
Q02
2SC4517
/2SC3866
SWITCHING
MAIN OSC
Q01
2SC4204
SWITCHING
CONTROL
-134.0
-134.0
-134.0
D06
GMB01B
C10
3300P
(BK)
R08
3.9K
R06
1.2
(1W)
R09
470
C11
0.0082(BK)
D09
GMB01B
C12
0.0047
(AX)
(XK)
R11
2.7K
D08
GMB01B
HOT
IC01
PC120F
ERROR
VOLTAGE DET
-134.0
-132.0
4.1
5.1
R12
220
R13
1K
C22
0.022
C20
0.022
R17
820
R14
2.4K(G)
4.1
C24
150P
IC02
AN1431T
/L5431
2.5
0
R15
2.2K(G)
POWER SUPPLY BLOCK
SYMBOL NO. 10**~
D12
MA188
D13
RU3YX
C13
4.7/50
L03
22u
C14
330/50
C15
330/16
C16
22/50
R18
10 (1/2W)
D14
MA188
D15
AK03
L04
22u
C17
330/16
C18
1000
/6.3
D17
MA178
C21
100/16
C19
0.01
(FZ)
5.0
-0.5
5.0
D16
UZ-30BSA
Q04
KRA103M
R16
22K
SWITCHIG
P-DOWN-L
COLD
CONTINUE
MAIN 2/4
1 AL+44V
2 AL+12V
3 AL-30V
4 AL+5V
5 F1
6 F2
7 P-DOWN L
8 GND S
9 GND L
10 GND D
11 GND C
1
4
8
6
9
10
11
12
13
14
15
16
5
4
3
2
1
Y
Z
AA
BB
CC
DD
EE
FF

## Main 4/4 Schematic Diagram (9A-027S)


HOT CIRCUIT. BE CAREFUL
F01 T1.6A/250V
L02 68mH
D01~D04 1A5
C01 0.047/250
D01
D02
D03
D04
R01 4.7 (2W)
C04 47/400
C05 2200P/400
AC220V ~240V (50Hz)
T01
R02 39K (2W)
R25 43K (2W)
C08 0.01 /500
C07 56P /1000
D05 EG01C
R03 82K (1/4W)
R20 82K (1/4W)
R21 82K (1/4W)
R05 68K(1/4W)
R22 68K(1/4W)
R23 68K(1/4W)
R24 68K (1/4W)
R19 82K (1/4W)
R04 120 (1W)
-134.0
103.0
-134.7
C09 0.027(SR)
Q02 2SC4517 /2SC3866 /2SC3979
(SWITCHING MAIN OSC)
Q01 2SC4204
(SWITCHING CONTROL)
-134.0
-134.0
-134.0
D06 1SS254
C10 3300P (BK)
R08 3.9K
R06 1.2 (1W)
R09 470
C11 0.0082(BK)
D09 1SS254
C12 0.0047
R11 2.7K
D08 1SS254
IC01 PC120F
(ERROR VOLTAGE DET)
-134.0
-132.0
4.1
5.1
HOT
R12 220
R13 1K
C22 0.022
C20 0.022
R17 820
R14 2.4K(G)
C24 150P
IC02 AN1431T
4.1
2.5
0
R15 2.2K(G)
5.0
5.0
-0.5
D16 MTZ30A
Q04 KRA103M
R16 22K
(SWITCHIG P-DOWN-L)
COLD
POWER SUPPLY BLOCK SYMBOL NO. 10**~
D12 MA188
C13 33/50
D13 RU3YX
L03 22u
C14 330/50
C15 330/16
C16 22/50
R18 10 (1/2W)
D14 MA188
D15 AK03
L04 22u
C17 330/16
C18 1000 /6.3
D17 MA178
C21 100/16
C19 0.01 (FZ)
(CONTINUE MAIN 2/4)
1 AL+44V
2 AL+12V
3 AL-30V
4 AL+5V
5 F1
6 F2
7 P-DOWN L
8 GND S
9 GND L
10 GND D
11 GND C
1 2 3 4 5
Y Z AA BB CC DD EE FF

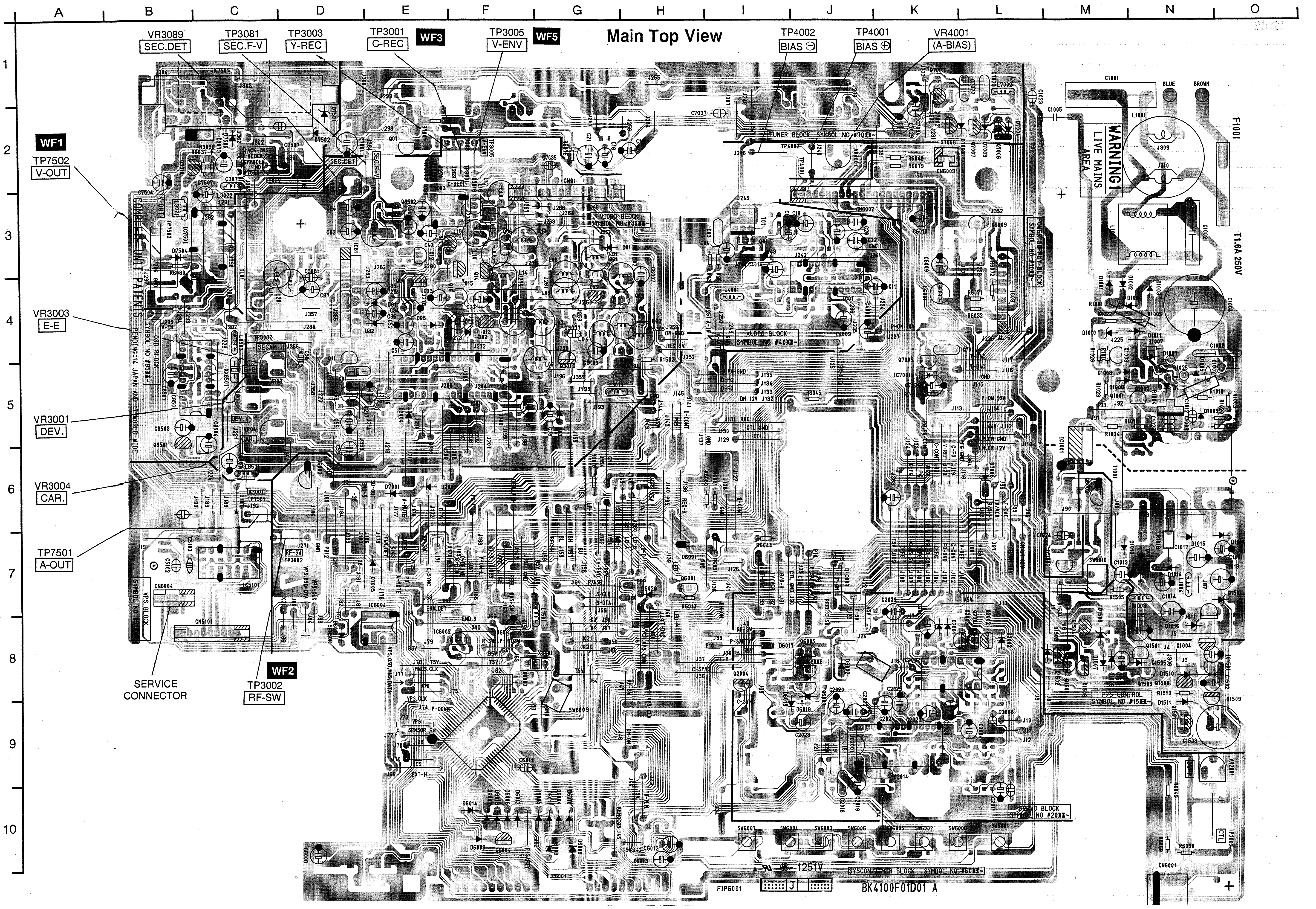
**Note;**

# Main Top View

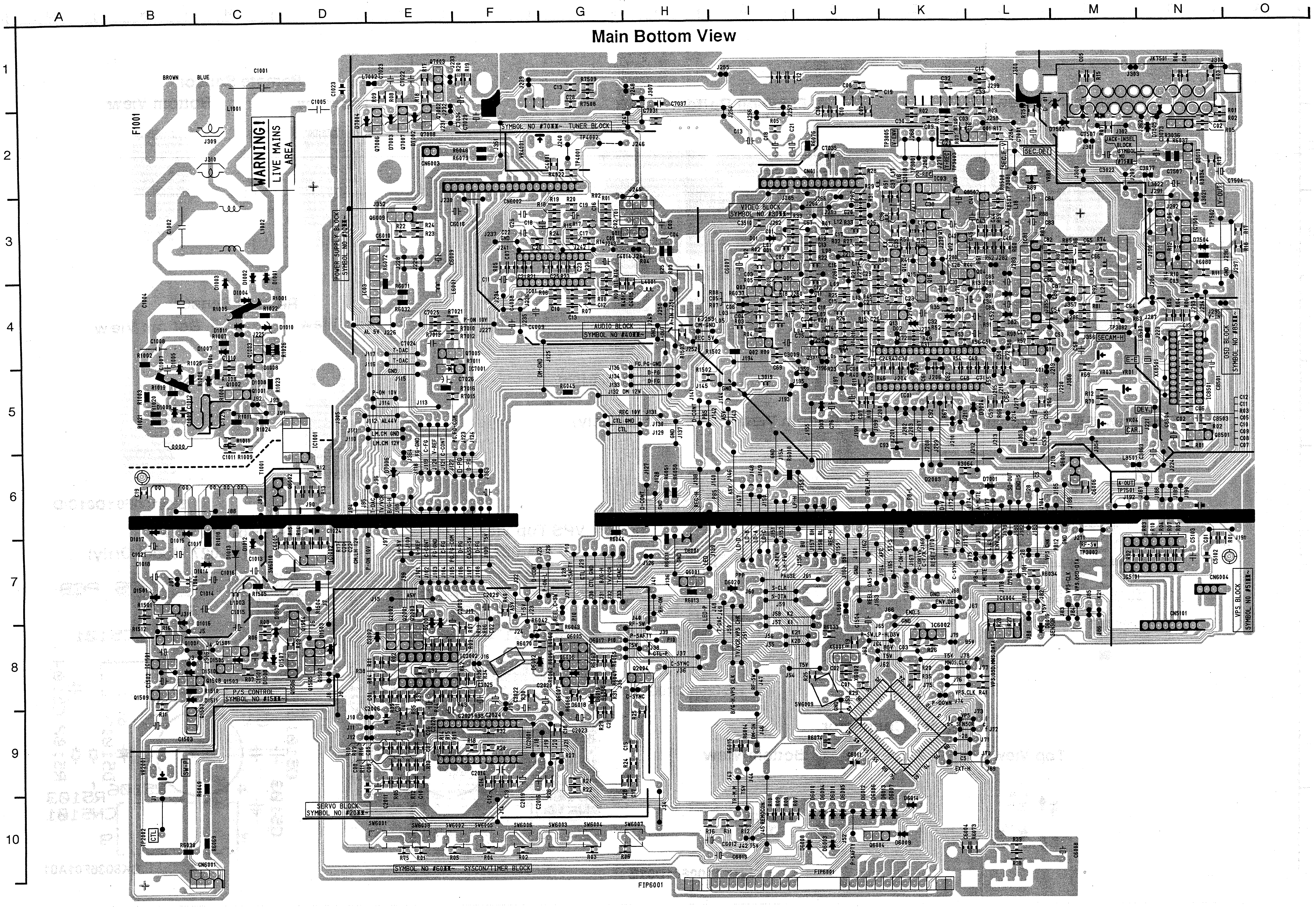

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
1
2
3
4
5
6
7
8
9
10
VR3089
SEC.DET
TP3081
SEC.F-V
TP3003
Y-REC
TP3001
C-REC
WF3
TP3005
V-ENV
WF5
TP4002
BIAS ⊖
TP4001
BIAS ⊕
VR4001
(A-BIAS)
WF1
TP7502
V-OUT
VR3003
E-E
VR3001
DEV.
VR3004
CAR.
TP7501
A-OUT
SERVICE CONNECTOR
WF2
TP3002
RF-SW
WARNING!
LIVE MAINS AREA
BLUE
BROWN
F1001
T1.6A 250V
COMPLETE UNIT PATENTS
PENDING IN JAPAN AND 17 WORLD-WIDE
TUNER BLOCK SYMBOL NO.#70※※~
VIDEO BLOCK SYMBOL NO.#30※※~
AUDIO BLOCK SYMBOL NO.#40※※~
POWER SUPPLY BLOCK SYMBOL NO.#10※※~
OSD BLOCK SYMBOL NO.#85※※~
VPS BLOCK SYMBOL NO.#51※※~
JACK-INSEL BLOCK SYMBOL NO.#75※※~
P/S CONTROL SYMBOL NO.#15※※~
SERVO BLOCK SYMBOL NO.#20※※~
SYSCON/TIMER BLOCK SYMBOL NO.#60※※~
FIP6001
BK4100F01D01 A

**Note;**

## Main Top View


A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
1
2
3
4
5
6
7
8
9
10
VR3089
SEC.DET
TP3081
SEC.F-V
TP3003
Y-REC
TP3001
C-REC
WF3
TP3005
V-ENV
WF5
TP4002
BIAS ⊖
TP4001
BIAS ⊕
VR4001
(A-BIAS)
WF1
TP7502
V-OUT
VR3003
E-E
VR3001
DEV.
VR3004
CAR.
TP7501
A-OUT
SERVICE
CONNECTOR
WF2
TP3002
RF-SW
WARNING!
LIVE MAINS
AREA
F1001
T1.6A 250V
BLUE
BROWN
COMPLETE UNIT PATENTS
TUNER BLOCK SYMBOL NO #70XX~
VIDEO BLOCK SYMBOL NO #30XX~
AUDIO BLOCK SYMBOL NO #40XX~
POWER SUPPLY BLOCK SYMBOL NO #10XX~
P/S CONTROL SYMBOL NO #15XX~
SERVO BLOCK SYMBOL NO #20XX~
SYSCON/TIMER BLOCK SYMBOL NO #60XX~
VPS BLOCK SYMBOL NO #51XX~
OSD BLOCK SYMBOL NO #85XX~
FIP6001
BK4100F01D01 A

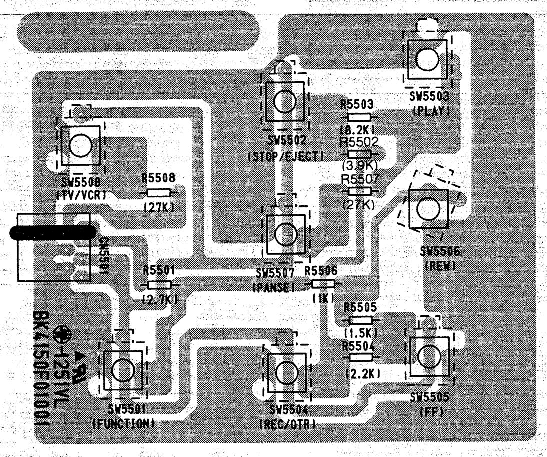
# Main Bottom View



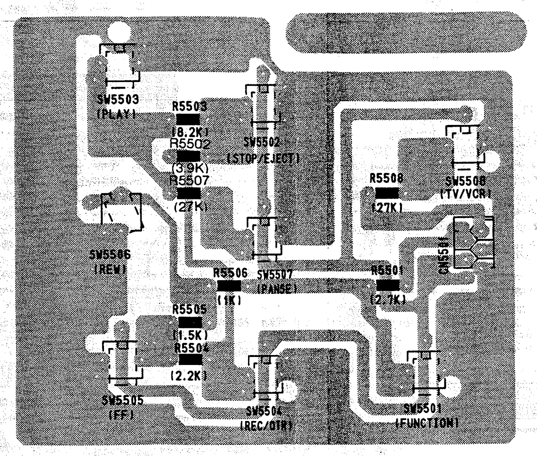
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
1
2
3
4
5
6
7
8
9
10
WARNING! LIVE MAINS AREA
BROWN
BLUE
F1001
POWER SUPPLY BLOCK SYMBOL NO #10XX
SYMBOL NO #70XX TUNER BLOCK
AUDIO BLOCK SYMBOL NO #40XX
VIDEO BLOCK SYMBOL NO #30XX
JACK-INSEL BLOCK SYMBOL NO #75XX
OSD BLOCK SYMBOL NO #85XX
VPS BLOCK SYMBOL NO #51XX
P/S CONTROL SYMBOL NO #15XX
SERVO BLOCK SYMBOL NO #20XX
SYMBOL NO #60XX SYSCON/TIMER BLOCK
FIP6001

**BK4100F01D01A**

## Function Top View


SW5503 (PLAY)
R5503 (8.2K)
R5502 (3.9K)
R5507 (27K)
SW5502 (STOP/EJECT)
SW5508 (TV/VCR)
R5508 (27K)
CN5501
SW5507 (PAUSE)
R5506 (1K)
SW5506 (REW)
R5501 (2.7K)
R5505 (1.5K)
R5504 (2.2K)
SW5501 (FUNCTION)
SW5504 (REC/OTR)
SW5505 (FF)
BK4150F01001
125IVL

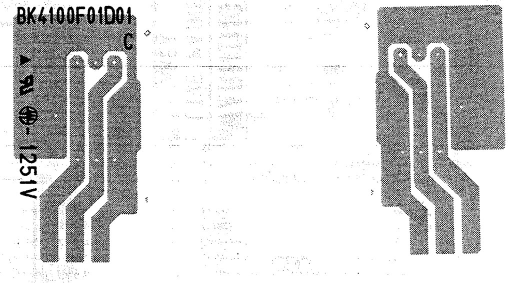
## Function Bottom View


SW5503 (PLAY)
R5503 (8.2K)
R5502 (3.9K)
R5507 (27K)
SW5502 (STOP/EJECT)
R5508 (27K)
SW5508 (TV/VCR)
CN5501
SW5506 (REW)
R5506 (1K)
SW5507 (PAUSE)
R5501 (2.7K)
R5505 (1.5K)
R5504 (2.2K)
SW5505 (FF)
SW5504 (REC/OTR)
SW5501 (FUNCTION)

BK4150F01001

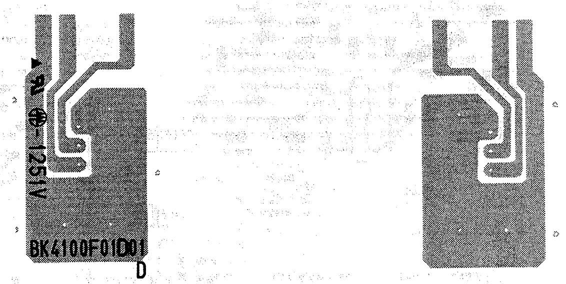
## Remote Sensor

Top View Bottom View


BK4100F01D01
C
125IV

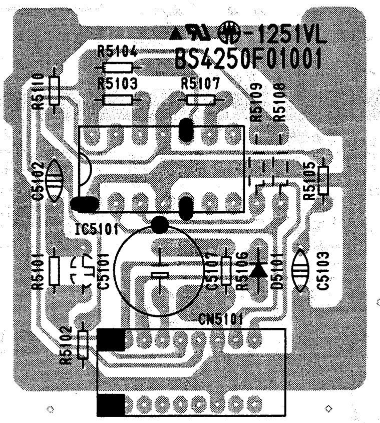
## Remote Sensor

Top View Bottom View

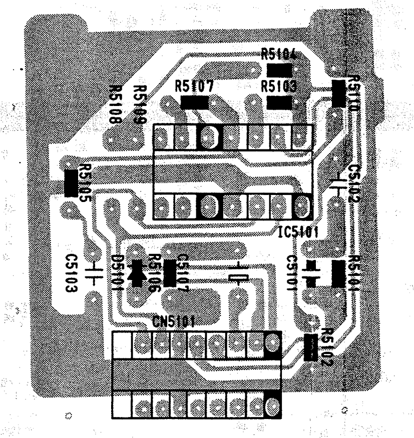

125IV
BK4100F01D01
D

BK4100F01D01C/D

## VPS Top View (8A-027 Model Only)


1251VL
BS4250F01001
R5104
R5103
R5107
R5110
R5109
R5108
C5102
R5105
IC5101
R5101
C5101
R5106
D5101
C5103
CN5101
R5102

## VPS Bottom View (8A-027 Model Only)


R5104
R5103
R5107
R5109
R5108
R5110
R5105
C5102
IC5101
C5103
D5101
R5106
C5101
R5101
CN5101
R5102

BS4250F01001

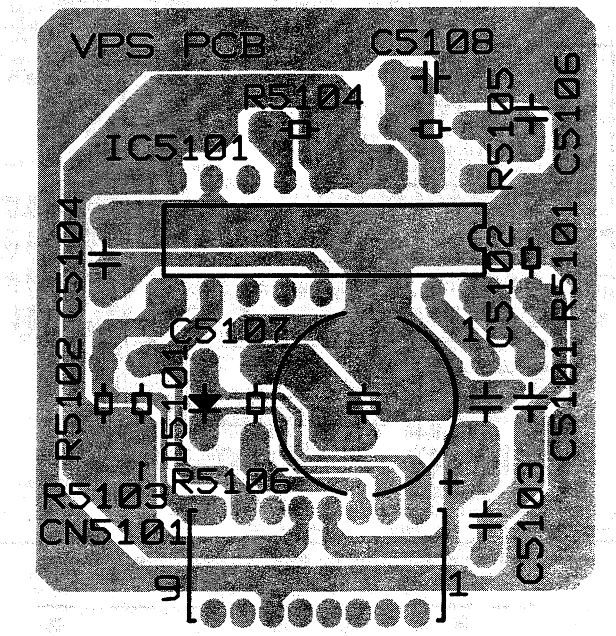
## Service Connector

Top View Bottom View

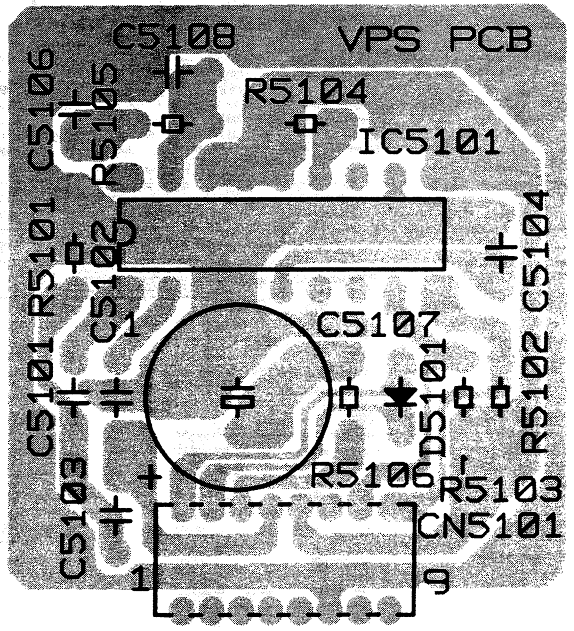
OFF
ON
R4
BK4100F01C01
E

BK4100F01D01E

## VPS Top View
(8A-027 Model Only)

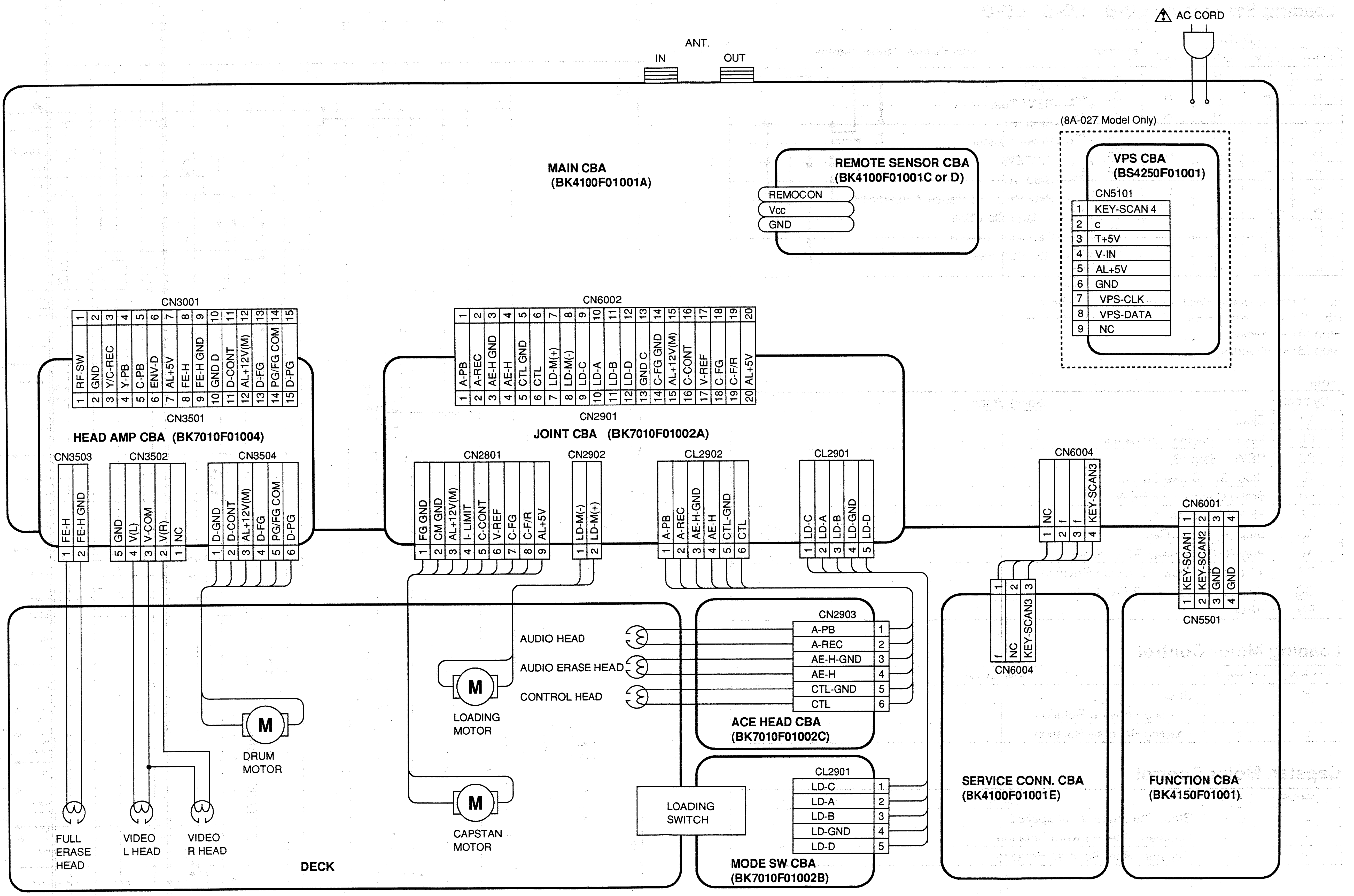

VPS PCB
C5108
R5104
IC5101
R5105
C5106
C5104
C5102
R5101
C5101
R5102
D5101
C5107
R5103
R5106
CN5101
C5103
9
1

## VPS Bottom View
(8A-027 Model Only)


C5108
VPS PCB
C5106
R5105
R5104
IC5101
R5101
C5102
C5104
R5102
C5101
C5107
D5101
C5103
R5106
R5103
CN5101
1
9

BK8036F01A01

# WIRING DIAGRAM

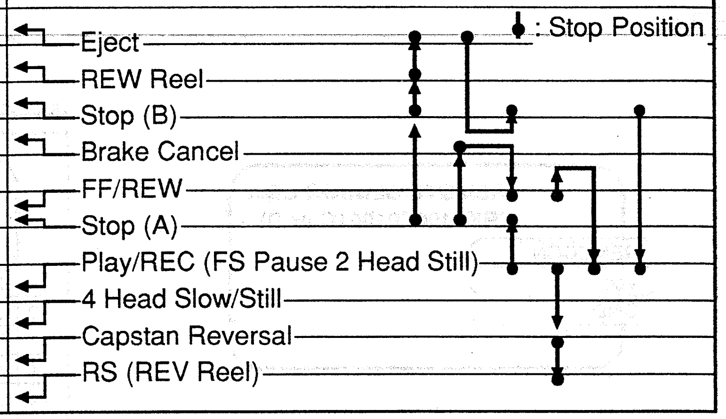

AC CORD
ANT.
IN
OUT
(8A-027 Model Only)
MAIN CBA
(BK4100F01001A)
REMOTE SENSOR CBA
(BK4100F01001C or D)
REMOCON
Vcc
GND
VPS CBA
(BS4250F01001)
CN5101
1 KEY-SCAN 4
2 c
3 T+5V
4 V-IN
5 AL+5V
6 GND
7 VPS-CLK
8 VPS-DATA
9 NC
CN3001
1 RF-SW
2 GND
3 Y/C-REC
4 Y-PB
5 C-PB
6 ENV-D
7 AL+5V
8 FE-H
9 FE-H GND
10 GND D
11 D-CONT
12 AL+12V(M)
13 D-FG
14 PG/FG COM
15 D-PG
CN3501
HEAD AMP CBA (BK7010F01004)
CN3503
1 FE-H
2 FE-H GND
CN3502
5 GND
4 V(L)
3 V-COM
2 V(R)
1 NC
CN3504
1 D-GND
2 D-CONT
3 AL+12V(M)
4 D-FG
5 PG/FG COM
6 D-PG
CN6002
1 A-PB
2 A-REC
3 AE-H GND
4 AE-H
5 CTL GND
6 CTL
7 LD-M(+)
8 LD-M(-)
9 LD-C
10 LD-A
11 LD-B
12 LD-D
13 GND C
14 C-FG GND
15 AL+12V(M)
16 C-CONT
17 V-REF
18 C-FG
19 C-F/R
20 AL+5V
CN2901
JOINT CBA (BK7010F01002A)
CN2801
1 FG GND
2 CM GND
3 AL+12V(M)
4 I- LIMIT
5 C-CONT
6 V-REF
7 C-FG
8 C-F/R
9 AL+5V
CN2902
1 LD-M(-)
2 LD-M(+)
CL2902
1 A-PB
2 A-REC
3 AE-H-GND
4 AE-H
5 CTL-GND
6 CTL
CL2901
1 LD-C
2 LD-A
3 LD-B
4 LD-GND
5 LD-D
CN6004
1 NC
2 f
3 f
4 KEY-SCAN3
CN6001
1 KEY-SCAN1
2 KEY-SCAN2
3 GND
4 GND
CN5501
CN6004
1 f
2 NC
3 KEY-SCAN3
AUDIO HEAD
AUDIO ERASE HEAD
CONTROL HEAD
M
LOADING MOTOR
M
DRUM MOTOR
M
CAPSTAN MOTOR
FULL ERASE HEAD
VIDEO L HEAD
VIDEO R HEAD
DECK
CN2903
A-PB 1
A-REC 2
AE-H-GND 3
AE-H 4
CTL-GND 5
CTL 6
ACE HEAD CBA
(BK7010F01002C)
LOADING SWITCH
CL2901
LD-C 1
LD-A 2
LD-B 3
LD-GND 4
LD-D 5
MODE SW CBA
(BK7010F01002B)
SERVICE CONN. CBA
(BK4100F01001E)
FUNCTION CBA
(BK4150F01001)

# SYSTEM CONTROL TIMING CHARTS

## Loading SW : LD-A / LD-B / LD-C / LD-D

| LD-SW | | | | Symbol |
|---|---|---|---|---|
| LD-A | LD-B | LD-C | LD-D | |
| L | H | H | H | EJ |
| H | H | H | H | CL |
| L | L | H | H | SB |
| H | L | H | H | TL |
| H | L | L | H | FB |
| H | H | L | H | SF |
| H | H | L | L | AU |
| H | H | H | L | AL |
| H | L | H | L | SS |
| H | H | H | H | GC |
| L | H | H | L | RS |

Stop Position (Stop Pattern)


: Stop Position
Eject
REW Reel
Stop (B)
Brake Cancel
FF/REW
Stop (A)
Play/REC (FS Pause 2 Head Still)
4 Head Slow/Still
Capstan Reversal
RS (REV Reel)

Note :

EJ → RS : Loading FWD (LD-FWD "H", LD-REV "L")
RS → EJ : Loading REV (LD-FWD "L", LD-REV "H")
Stop (A) = Loading
Stop (B) = Unloading

Note :

| Symbol | Loading Status |
|---|---|
| EJ | Eject |
| CL | Eject ~ Loading Completion |
| SB | REW ~ Stop (B) |
| TL | Stop (B) ~ Brake Cancel |
| FB | Brake Cancel ~ FF/REW |
| SF | FF/REW ~ Stop (A) |
| AU | Stop (A) ~ Play/Rec |
| AL | Play/REC ~ 4 Head STILL/Slow |
| SS | 4 Head Still/Slow ~ Capstan Reversal |
| GC | Capstan Reversal ~ REW Reel |
| RS | REW |

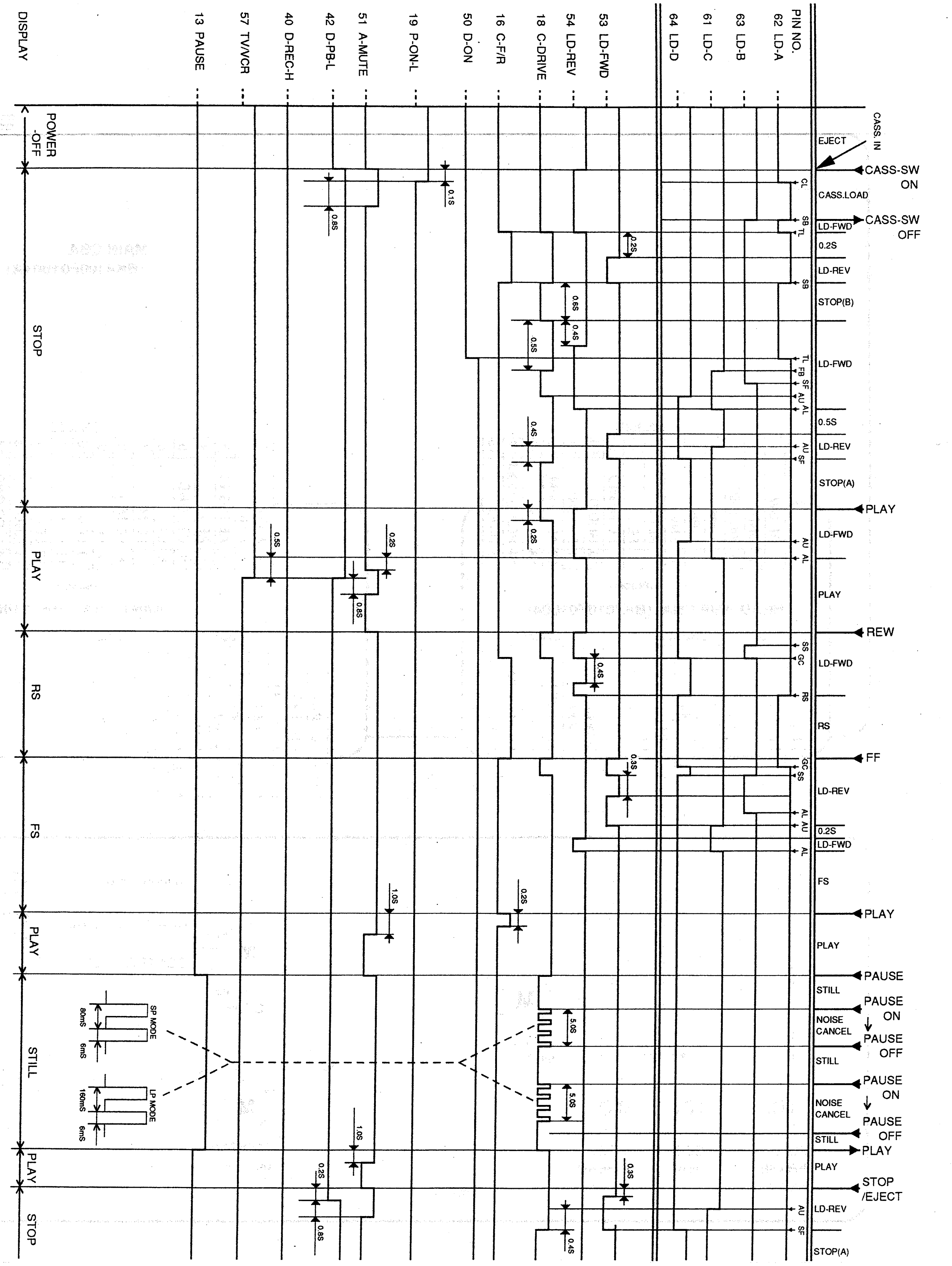
## Loading Motor Control

| LD-FWD | LD-REV | Description |
|---|---|---|
| H | H | Stop |
| H | L | Loading Forward Rotation |
| L | H | Loading Reverse Rotation |

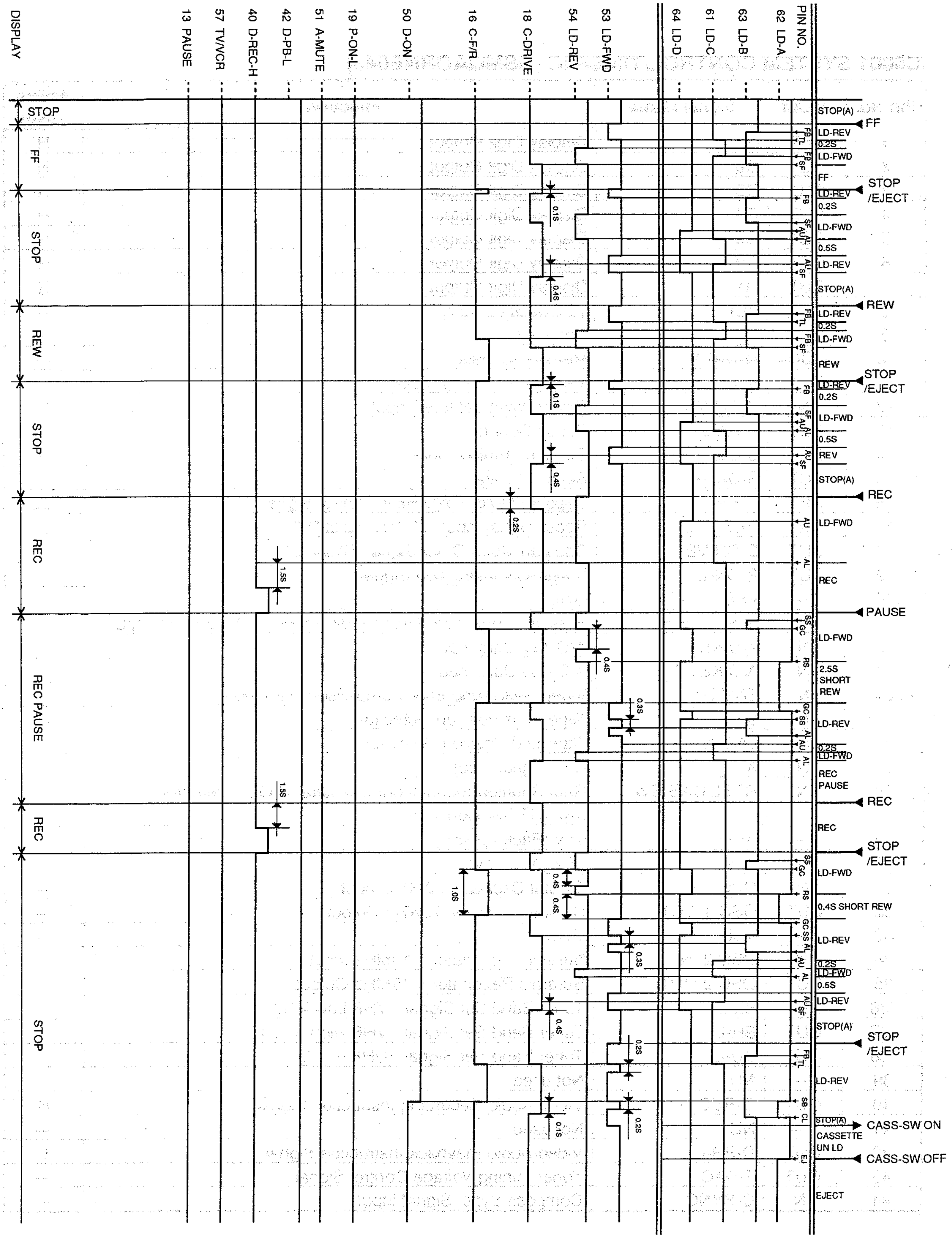
## Capstan Motor Control

| C-DRIVE | C-F/R | Description |
|---|---|---|
| L | L/H | Stop, The brake is not applied. |
| H | L | Capstan, Reel Forward Rotation |
| H | H | Capstan, Reel Reverse Rotation |

View 1


DISPLAY
13 PAUSE
57 TV/VCR
40 D-REC-H
42 D-PB-L
51 A-MUTE
19 P-ON-L
50 D-ON
16 C-F/R
18 C-DRIVE
54 LD-REV
53 LD-FWD
64 LD-D
61 LD-C
63 LD-B
62 LD-A
PIN NO.
POWER -OFF
STOP
PLAY
RS
FS
PLAY
STILL
PLAY
STOP
CASS. IN
EJECT
CASS-SW ON
CASS.LOAD
CASS-SW OFF
LD-FWD
0.2S
LD-REV
STOP(B)
LD-FWD
0.5S
LD-REV
STOP(A)
PLAY
LD-FWD
PLAY
REW
LD-FWD
RS
FF
LD-REV
0.2S
LD-FWD
FS
PLAY
PLAY
PAUSE
STILL
PAUSE ON
NOISE CANCEL
PAUSE OFF
STILL
PAUSE ON
NOISE CANCEL
PAUSE OFF
STILL
PLAY
PLAY
STOP /EJECT
LD-REV
STOP(A)
CL
SB
TL
FB
SF
AU
AL
SS
GC
RS
SP MODE
LP MODE
80mS
160mS
6mS
0.1S
0.8S
0.4S
0.5S
0.2S
0.3S
1.0S
5.0S

## View 2


DISPLAY
13 PAUSE
57 TV/VCR
40 D-REC-H
42 D-PB-L
51 A-MUTE
19 P-ON-L
50 D-ON
16 C-F/R
18 C-DRIVE
54 LD-REV
53 LD-FWD
64 LD-D
61 LD-C
63 LD-B
62 LD-A
PIN NO.
STOP
FF
STOP
REW
STOP
REC
REC PAUSE
REC
STOP
STOP(A)
FF
LD-REV
0.2S
LD-FWD
FF
STOP
/EJECT
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
REW
LD-REV
0.2S
LD-FWD
REW
STOP
/EJECT
LD-REV
0.2S
LD-FWD
0.5S
REV
STOP(A)
REC
LD-FWD
REC
PAUSE
LD-FWD
2.5S
SHORT
REW
LD-REV
0.2S
LD-FWD
REC
PAUSE
REC
REC
STOP
/EJECT
LD-FWD
0.4S SHORT REW
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
STOP
/EJECT
LD-REV
STOP(A)
CASS-SW ON
CASSETTE
UN LD
CASS-SW OFF
EJECT
FB
TL
FB
SF
FB
SF
AU
AL
AU
SF
SS
GC
RS
GC
SS
AL
AU
AL
SB
CL
EJ
0.1S
0.4S
0.2S
1.5S
0.4S
0.3S
1.0S
0.4S
0.4S
0.3S
0.2S
0.2S
0.1S

# IC PIN FUNCTION DESCRIPTIONS

## IC6001 SYSTEM CONTROL/TIMER IC (QSMQAORNE043)

| Pin No. | In/Out | Signal Name | Function | Active Level |
|---|---|---|---|---|
| 1 | OUT | G7 | Display Digit Output | H |
| 2 | OUT | G6 | Display Digit Output | H |
| 3 | OUT | G5 | Display Digit Output | H |
| 4 | OUT | G4 | Display Digit Output | H |
| 5 | OUT | G3 | Display Digit Output | H |
| 6 | OUT | G2 | Display Digit Output | H |
| 7 | OUT | G1 | Display Digit Output | H |
| 8 | IN | VDD | +5V(Back up +5V) | — |
| 9 | — | NU | Not used | — |
| 10 | IN/OUT | M-DATA | Memory IC Data | — |
| 11 | OUT | M-CLK | Memory IC Timing Clock | — |
| 12 | IN | P-DOWN | Power down detected input | L |
| 13 | OUT | PAUSE | Pause Control | H |
| 14 | OUT | S-CLK | Servo IC Timing Clock | — |
| 15 | OUT | S-DATA | Servo IC Data | — |
| 16 | OUT | C-F/R | Capstan Motor FWD/REV Control Signal | H/L |
| 17 | IN | RESET-L | Reset Signal Input "L", Normal at "H" | L |
| 18 | OUT | C-DRIVE | Capstan Motor Drive Signal (Stop="L") | — |
| 19 | OUT | P-ON-L | Power-ON Instruction Signal | L |
| 20 | — | VSS | GND | — |
| 21 | IN | R-SFT/LP-H | Erasure Prevention Switch/Tape Speed LP Mode="H" Input | — |
| 22 | IN | A/D KEY 1 | A/D Key Data Input 1 | — |
| 23 | IN | A/D KEY 2 | A/D Key Data Input 2 | — |
| 24 | IN | ENV-D | Video Head Amp ENV Comparison Data Input | — |
| 25 | IN | ST-S | Tape Start Position Detection | L |
| 26 | IN | END-S | Tape End Position Detection | L |
| 27 | IN | AFT | AFT Signal Input | — |
| 28 | IN | REEL/CAS-SW | Reel Rotation Signal Input/Cassette IN/OUT Detector (IN/OUT Rotation = "H") | — |
| 29 | — | ADD | +5V (Back up +5V) | — |
| 30 | — | ADD | +5V (ALL +5V) | — |
| 31 | IN | OSC 1 IN | Crystal Oscillator 32 KHz Input | — |
| 32 | OUT | OSC 1 OUT | Crystal Oscillator 32 KHz Output | — |
| 33 | — | VSS | GND | — |
| 34 | IN | OSC 2 IN | Seramic Rezonator 4.19MHz Input | — |
| 35 | OUT | OSC 2 OUT | Seramic Rezonator 4.19MHz Output | — |
| *36 | OUT | BL-L | Tuner Band Set Signal (VHF Low = "L") | L |
| *37 | OUT | BH-L | Tuner Band Set Signal (VHF High = "L") | L |
| *38 | OUT | BU-L | Tuner Band Set Signal (UHF = "L") | L |
| 39 | — | NU | Not used | — |
| 40 | OUT | D-REC-H | Video/Audio Recording Instruction Signal | H |
| 41 | — | NU | Not used | — |
| 42 | OUT | D-PB-L | Video/Audio Playback Instruction Signal | L |
| 43 | OUT | T-DAC | Tuner Tuning Voltage Control Signal | — |
| 44 | IN | C-SYNC | Composit Sync. Signal Input | — |

| Pin No. | In/Out | Signal Name | Function | Active Level |
|---|---|---|---|---|
| 45 | IN | CTL-P | CTL AMP Input | — |
| 46 | IN | RF-SW | Video Head Switching Pulse | H/L |
| 47 | IN | REMOCON | Remote Control Signal Input | — |
| 48 | — | VSS | GND | — |
| 49 | OUT | TR-MM | Tracking Control Signal Output | — |
| 50 | OUT | D-ON | Drum Rotate Instruction | H |
| 51 | OUT | A-MUTE | Audio Mute Signal | H |
| 52 | — | VDD | +5V(Back up +5V) | — |
| 53 | OUT | LD-FWD | Loading Motor Forward Instruction | H |
| 54 | OUT | LD-REV | Loading Motor Reverse Instruction | H |
| 55 | OUT | LED-P | Pulse Signal for ST/END Sensor | H/L |
| 56 | — | NU | Not used | — |
| 57 | — | NU | Not used | — |
| 58 | — | NU | Not used | — |
| 59 | IN | KEY-SCAN 3 | Key Scan Signal Input 3 | H |
| 60 | IN | KEY-SCAN 4 | Key Scan Signal Input 4 | H |
| 61 | IN | LD-C | Tape Loading Position Detector | — |
| 62 | IN | LD-A | Tape Loading Position Detector | — |
| 63 | IN | LD-B | Tape Loading Position Detector | — |
| 64 | IN | LD-D | Tape Loading Position Detector | — |
| 65 | OUT | a | Display Segment Output/Key Scan Signal Output | H |
| 66 | OUT | b | Display Segment Output/Key Scan Signal Output | H |
| 67 | OUT | c | Display Segment Output/Key Scan Signal Output | H |
| 68 | OUT | d | Display Segment Output/Key Scan Signal Output | H |
| 69 | OUT | e | Display Segment Output/Key Scan Signal Output | H |
| 70 | OUT | f | Display Segment Output/Key Scan Signal Output | H |
| 71 | — | V LOAD | -28V | — |
| 72 | OUT | g | Display Segment Output/Key Scan Signal Output | H |
| 73 | OUT | h | Display Segment Output/Key Scan Signal Output | H |
| 74 | OUT | i | Display Segment Output/Key Scan Signal Output | H |
| 75 | OUT | j | Display Segment Output/Key Scan Signal Output | H |
| 76 | — | NU | Not Used | — |
| 77 | OUT | EXT-H | Input Select IC Control ("H" at External) | H |
| 78 | OUT | G10 | Display Digit Output | H |
| 79 | OUT | G9 | Display Digit Output | H |
| 80 | OUT | G8 | Display Digit Output | H |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
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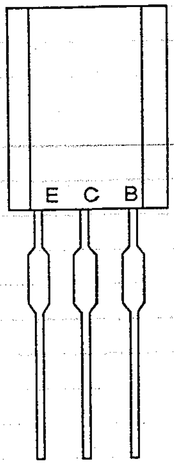
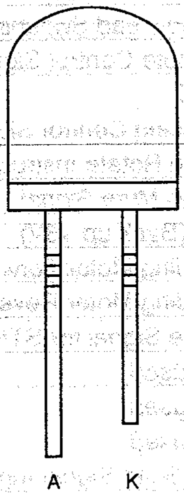
|  |  |  |  |  |

# LEAD IDENTIFICATIONS

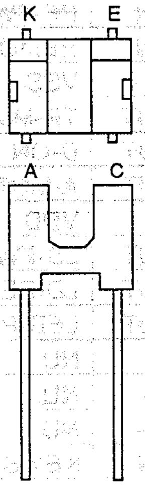


DTA143
DTA144
2SA608
2SC536
2SC3400
2SC2839
2SD400
2SC4204
2SC3199
2SA1267
KRC103M
KRA103M
2SC3193
KRA109M
2SC3330
2SA1346

SIR-481ST3F



SG-211



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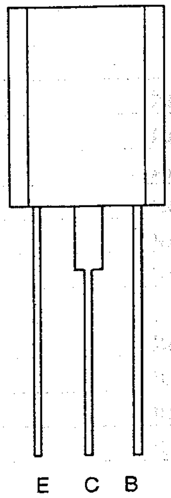
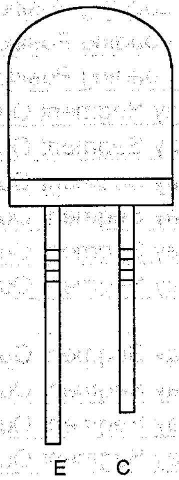
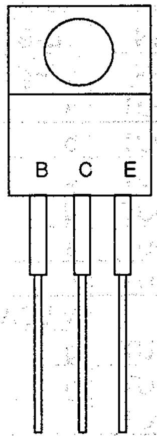


RPT-38PB3F





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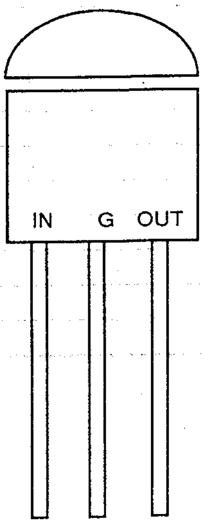
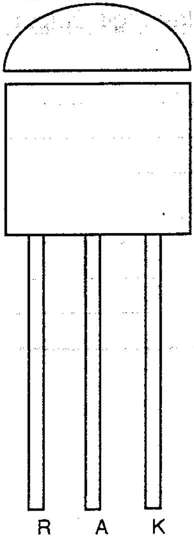
2SC3866

PST529



AN1431T
L5431



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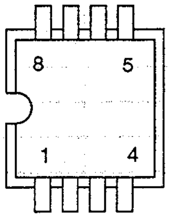
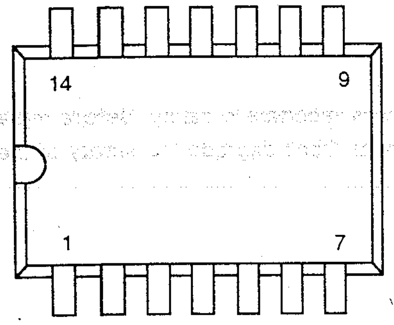
LC89925



KIA324P
BA10324



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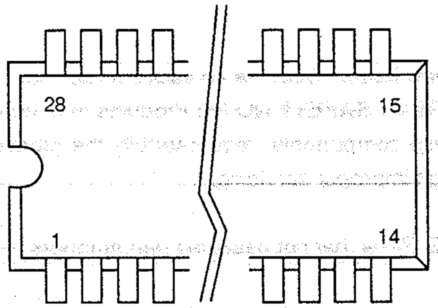

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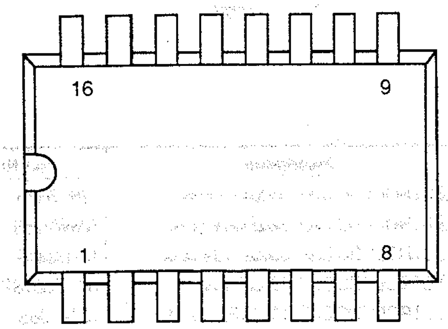
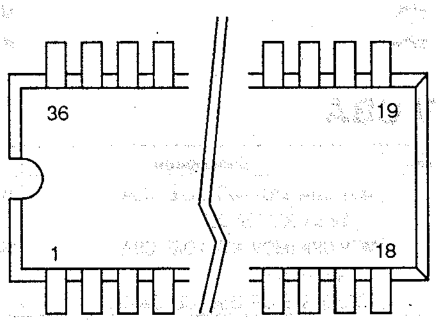
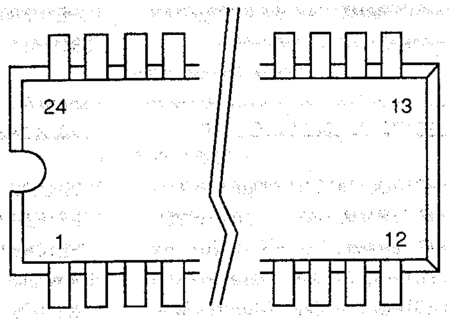


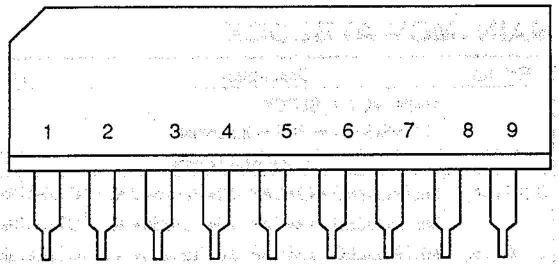
LA7347



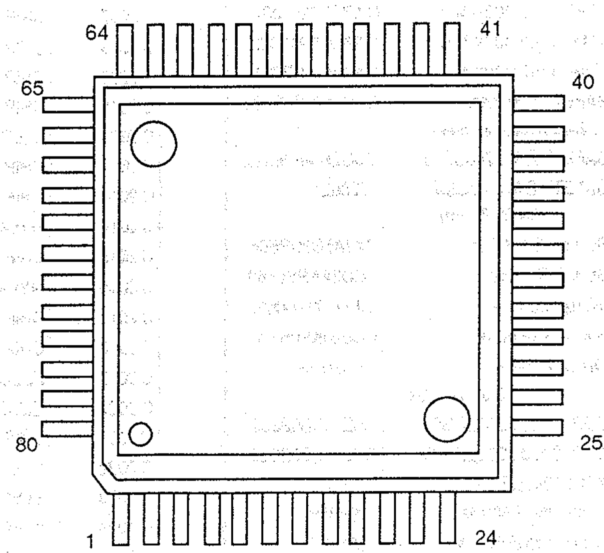
LA7282



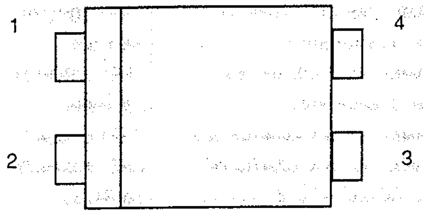
TA7291S



QSMQA0RNE033

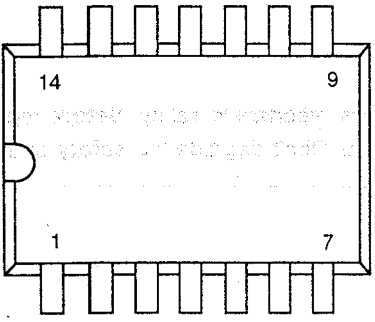

64
41
65
40
80
25
1
24

TLP621
PC120



Note:
A: Anode
B: Cathode
E: Emitter
C: Collector
B: Base
R: Reference

KIA324P
BA10324



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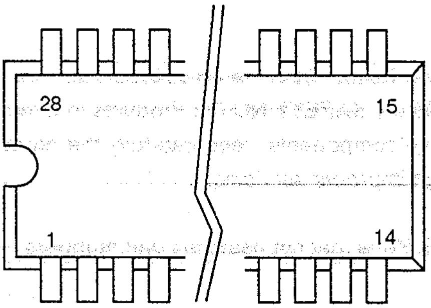

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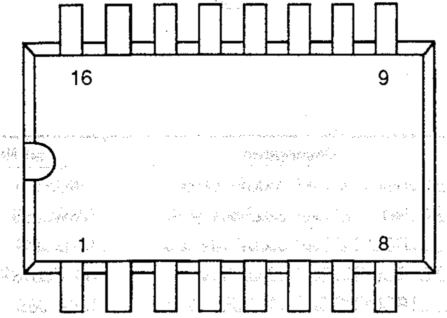

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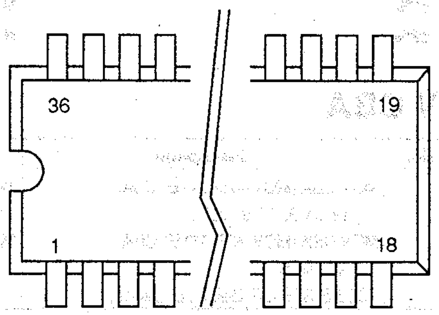

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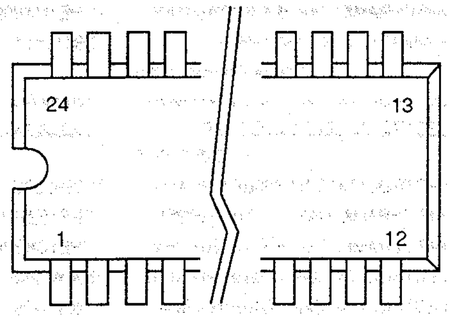

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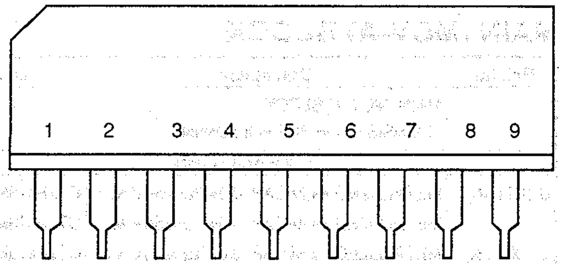

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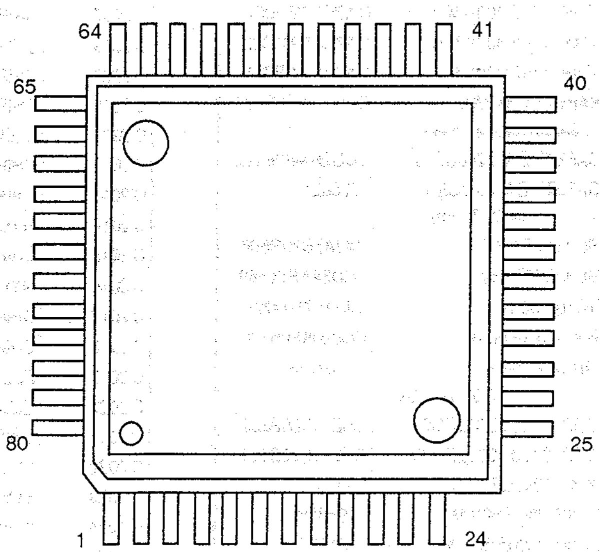
64
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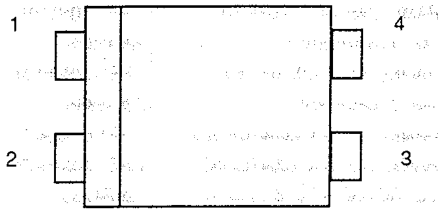
TLP621
PC120



Note:
A: Anode
B: Cathode
E: Emitter
C: Collector
B: Base
R: Reference

# ELECTRICAL PARTS LIST

**General Note: "CBA" is an abbreviation for "Circuit Board Assembly".**

**PRODUCT SAFETY NOTE:** Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

**NOTE:** Parts that not assigned part numbers (------------) are not available.

Tolerance of Capacitors and Resistors are noted with the following symbols.

C..........±0.25%
D..........±0.5%
F..........±1%
G..........±2%

J..........±5%
K..........±10%
M..........±20%
N..........±30%

Z..........+80/-20%
X..........+40/-20%
P..........+100%

## MCV CBA

| Ref. No. | Description | Part No. |
|---|---|---|
| | MCV CBA (MCV-A/B/C/D/E) CBA ( for 8A-007 / 8A-027 ) | 0VSA06165 |
| | MCV CBA (MCV-A/B/C/D/E) CBA ( 9A-027S ) | 0VSA06197 |
| | CONSISTS OF THE FOLLOWING: | |
| | MAIN (MCV-A) BLOCK | ------------ |
| | FUNCTION (MCV-B) BLOCK | ------------ |
| | REMOTE SENSOR (MCV-C/D) BLOCK | ------------ |
| | SERVICE CONNECTOR (MCV-E) BLOCK | ------------ |

## MAIN (MCV-A) BLOCK

| Ref. No. | Description | Part No. |
|---|---|---|
| | MAIN (MCV-A) BLOCK | ------------ |
| | CONSISTS OF THE FOLLOWING: | |
| | **CAPACITORS** | |
| C 1001 ⚠ | METALLIZED FILM CAP. 0.047μF/250V K or | CT2E473NC011 |
| | METALLIZED FILM CAP. 0.047μF/250V M | CT2E473MS001 |
| C 1002 ⚠ | METALLIZED FILM CAP. 0.047μF/250V K or | CT2E473NC011 |
| | METALLIZED FILM CAP. 0.047μF/250V M ( 8A-007/8A-027 only) | CT2E473MS001 |
| C 1004 | ELECTROLYTIC CAP. 47μF/400V M or | 122Z651 |
| | ELECTROLYTIC CAP. 47μF/400V M or | CA2H470EA004 |
| | ELECTROLYTIC CAP. 47μF/400V M or | CA2H470MS002 |
| | ELECTROLYTIC CAP. 47μF/400V M | CA2H470SP024 |
| C 1005 ⚠ | CERAMIC CAP./SAFETY E M 2200PF ( 8A-007/8A-027 only) | CCG2HMP0E222 |
| C 1005 ⚠ | CERAMIC CAP./SAFETY E M 2200μF or | CCG2HMP0E222 |
| | CERAMIC CAP./SAFETY E M 0.0022μF (9A-027S only) | 1220621 |
| C 1007 | CERAMIC CAP. SL J 56PF/1KV or | CA3A560MR506 |
| | CERAMIC CAP. SL K 56PF/1KV | CCD3AKPSL560 |
| C 1008 | CERAMIC CAP. 0.01μF/500V or | CA2J103TU001 |
| | CERAMIC CAP. B K 0.01μF/500V | CCD2JKP0B103 |
| C 1009 | SEMICONDUCTOR CAP. SR K 0.027μF/25V | 12Y2273S |
| C 1010 | CHIP CERAMIC CAP. B K 0.0033μF/50V | CHE1JKB0B332 |
| C 1011 | CHIP CERAMIC CAP. B K 0.0082μF/50V | CHE1JKB0B822 |
| C 1012 | CERAMIC CAP. X K 0.0047μF/16V | 3X4C472T |
| C 1013 | ELECTROLYTIC CAP. 33μF/50V M | 126F336S |
| C 1014 | ELECTROLYTIC CAP. 330μF/50V M | 126F337 |
| C 1015 | ELECTROLYTIC CAP. 330μF/16V M | 126C337S |
| C 1016 | ELECTROLYTIC CAP. 22μF/50V M H7 | 526W226S |
| C 1017 | ELECTROLYTIC CAP. 330μF/16V M or | 121D337S |
| | ELECTROLYTIC CAP. 330μF/16V | CA1C331SP008 |
| C 1018 | ELECTROLYTIC CAP. 1000μF/6.3V M | 126A108S |
| C 1019 | CHIP CERAMIC CAP. F Z 0.01μF/50V | CHE1JZB0F103 |
| C 1020 | CHIP CERAMIC CAP. B K 0.022μF/16V | CHE1CKB0B223 |
| C 1021 | ELECTROLYTIC CAP. 100μF/16V M H7 | 526T107S |
| C 1022 | CHIP CERAMIC CAP. B K 0.022μF/16V | CHE1CKB0B223 |
| C 1024 | CERAMIC CAP. B J 150PF/50V ( 8A-007/8A-027 only) | 3B41151T |
| C 1501 | ELECTROLYTIC CAP. 0.47μF/50V M H7 | 526W474S |
| C 1503 | ELECTRIC DOUBLE LAYER CAP. 0.022F/5.5V Z | CA0J223NE003 |
| C 1504 | ELECTROLYTIC CAP. 330μF/6.3V M H7 | 526R337S |
| C 2001 | CHIP CERAMIC CAP. F Z 0.047μF/25V | CHE1EZB0F473 |
| C 2002 | CHIP CERAMIC CAP. B K 0.022μF/16V | CHE1CKB0B223 |
| C 2003 | ELECTROLYTIC CAP. 0.22μF/50V M H7 | 526W224S |
| C 2004 | ELECTROLYTIC CAP. 100μF/16V M H7 | 526T107S |
| C 2005 | CHIP CERAMIC CAP. B K 0.01μF/25V | CHE1EKB0B103 |
| C 2006 | SEMICONDUCTOR CAP. SR K 0.1μF/16V | 12Y6104S |
| C 2007 | CHIP CERAMIC CAP. B K 0.01μF/25V | CHE1EKB0B103 |
| C 2008 | CHIP CERAMIC CAP. B K 0.027μF/16V | CHE1CKB0B273 |
| C 2009 | CHIP CERAMIC CAP. F Z 0.022μF/50V | CHE1JZB0F223 |
| C 2010 | CHIP CERAMIC CAP. B K 0.01μF/25V | CHE1EKB0B103 |
| C 2011 | ELECTROLYTIC CAP. 100μF/16V M H7 | 526T107S |
| C 2012 | CHIP CERAMIC CAP. SL J 100PF/50V | CHE1JJBSL101 |
| C 2013 | CHIP CERAMIC CAP. SL J 100PF/50V | CHE1JJBSL101 |
| C 2014 | MYLAR CAP. 0.033μF/50V J | 2254333S |
| C 2015 | CHIP CERAMIC CAP. F Z 0.1μF/16V | CHE1CZB0F104 |
| C 2016 | MYLAR CAP. 0.068μF/50V J | 2254683S |
| C 2017 | CHIP CERAMIC CAP. B K 0.0047μF/50V | CHE1JKB0B472 |
| C 2018 | CHIP CERAMIC CAP. B K 0.0047μF/50V | CHE1JKB0B472 |
| C 2019 | ELECTROLYTIC CAP. 47μF/6.3V M H7 | 526R476S |
| C 2020 | ELECTROLYTIC CAP. 47μF/6.3V M H7 | 526R476S |
| C 2021 | CHIP CERAMIC CAP. F Z 0.022μF/50V | CHE1JZB0F223 |
| C 2022 | ELECTROLYTIC CAP. 10μF/16V M H7 | 526T106S |
| C 2023 | ELECTROLYTIC CAP. 2.2μF/50V M NP H7 | 524X225S |
| C 2024 | ELECTROLYTIC CAP. 10μF/16V M H7 | 526T106S |
| C 2025 | ELECTROLYTIC CAP. 10μF/16V M H7 | 526T106S |

| Ref. No. | Description | Part No. |
|---|---|---|
| C 2026 | CHIP CERAMIC CAP. B K 0.01µF/25V | CHE1EKB0B103 |
| C 2027 | ELECTROLYTIC CAP. 10µF/16V M H7 | 526T106S |
| C 2028 | ELECTROLYTIC CAP. 10µF/16V M H7 | 526T106S |
| C 2029 | ELECTROLYTIC CAP. 1µF/50V M H7 | 526W105S |
| C 2030 | CHIP CERAMIC CAP. B K 0.022µF/16V ( 8A-007/8A-027 only) | CHE1CKB0B223 |
| C 2031 | CHIP CERAMIC CAP. B K 0.001µF/50V | CHE1JKB0B102 |
| C 3001 | CHIP CERAMIC CAP. SL J 18PF/50V | CHE1JJBSL180 |
| C 3002 | CHIP CERAMIC CAP. SL J 18PF/50V | CHE1JJBSL180 |
| C 3003 | CHIP CERAMIC CAP. SL J 39PF/50V | CHE1JJBSL390 |
| C 3004 | CHIP CERAMIC CAP. SL J 27PF/50V | CHE1JJBSL270 |
| C 3005 | CHIP CERAMIC CAP. SL J 27PF/50V | CHE1JJBSL270 |
| C 3006 | CHIP CERAMIC CAP. F Z 0.022µF/50V | CHE1JZB0F223 |
| C 3007 | CHIP CERAMIC CAP. F Z 0.01µF/50V | CHE1JZB0F103 |
| C 3009 | ELECTROLYTIC CAP. 47µF/6.3V M H7 | 526R476S |
| C 3010 | CHIP CERAMIC CAP. SL J 220PF/50V (8A-007/8A-027 only) | CHE1JJBSL221 |
| C 3010 | CHIP CERAMIC CAP. SL J 120PF/50V (9A-027S only) | CHE1JJBSL121 |
| C 3011 | CHIP CERAMIC CAP. SL J 56PF/50V (8A-007/8A-027 only) | CHE1JJBSL560 |
| C 3012 | CHIP CERAMIC CAP. SL J 220PF/50V | CHE1JJBSL221 |
| C 3013 | CHIP CERAMIC CAP. B K 0.022µF/16V | CHE1CKB0B223 |
| C 3014 | CHIP CERAMIC CAP. SL J 68PF/50V | CHE1JJBSL680 |
| C 3015 | CHIP CERAMIC CAP. SL J 150PF/50V | CHE1JJBSL151 |
| C 3016 | CHIP CERAMIC CAP. SL J 39PF/50V | CHE1JJBSL390 |
| C 3017 | CHIP CERAMIC CAP. F Z 0.047µF/25V | CHE1EZB0F473 |
| C 3019 | CHIP CERAMIC CAP. B K 0.022µF/16V | CHE1CKB0B223 |
| C 3020 | CHIP CERAMIC CAP. SL J 47PF/50V | CHE1JJBSL470 |
| C 3021 | ELECTROLYTIC CAP. 4.7µF/50V M H7 | 526W475S |
| C 3022 | ELECTROLYTIC CAP. 470µF/6.3V M | 126A477S |
| C 3023 | ELECTROLYTIC CAP. 1µF/50V M H7 | 526W105S |
| C 3024 | CHIP CERAMIC CAP. SL J 390PF/50V | CHE1JJBSL391 |
| C 3025 | CHIP CERAMIC CAP. SL J 180PF/50V | CHE1JJBSL181 |
| C 3026 | CHIP CERAMIC CAP. SL D 10PF/50V | CHE1JDBSL100 |
| C 3027 | CHIP CERAMIC CAP. SL J 22PF/50V | CHE1JJBSL220 |
| C 3028 | CHIP CERAMIC CAP. SL J 47PF/50V | CHE1JJBSL470 |
| C 3029 | CHIP CERAMIC CAP. SL J 56PF/50V | CHE1JJBSL560 |
| C 3030 | CHIP CERAMIC CAP. SL J 18PF/50V | CHE1JJBSL180 |
| C 3031 | CHIP CERAMIC CAP. SL J 100PF/50V | CHE1JJBSL101 |
| C 3032 | ELECTROLYTIC CAP. 10µF/16V M H7 | 526T106S |
| C 3033 | ELECTROLYTIC CAP. 10µF/16V M H7 | 526T106S |
| C 3034 | ELECTROLYTIC CAP. 0.47µF/50V M H7 | 526W474S |
| C 3035 | CHIP CERAMIC CAP. SL J 82PF/50V | CHE1JJBSL820 |
| C 3036 | CHIP CERAMIC CAP. SL D 6PF/50V | CHE1JDBSL6R0 |
| C 3037 | CHIP CERAMIC CAP. SL J 39PF/50V | CHE1JJBSL390 |
| C 3038 | CHIP CERAMIC CAP. F Z 0.022µF/50V | CHE1JZB0F223 |
| C 3039 | ELECTROLYTIC CAP. 10µF/16V M H7 | 526T106S |
| C 3041 | ELECTROLYTIC CAP. 1µF/50V M H7 | 526W105S |
| C 3042 | ELECTROLYTIC CAP. 1µF/50V M H7 | 526W105S |
| C 3043 | CHIP CERAMIC CAP. B K 0.01µF/25V | CHE1EKB0B103 |
| C 3044 | CHIP CERAMIC CAP. SL J 22PF/50V | CHE1JJBSL220 |
| C 3045 | CHIP CERAMIC CAP. SL J 220PF/50V | CHE1JJBSL221 |
| C 3046 | CHIP CERAMIC CAP. F Z 0.01µF/50V | CHE1JZB0F103 |
| C 3047 | CHIP CERAMIC CAP. F Z 0.022µF/50V | CHE1JZB0F223 |
| C 3048 | CHIP CERAMIC CAP. F Z 0.01µF/50V | CHE1JZB0F103 |
| C 3049 | CHIP CERAMIC CAP. B K 0.022µF/16V | CHE1CKB0B223 |
| C 3050 | CHIP CERAMIC CAP. B K 0.022µF/16V | CHE1CKB0B223 |
| C 3051 | ELECTROLYTIC CAP. 1µF/50V M H7 | 526W105S |
| C 3052 | ELECTROLYTIC CAP. 1µF/50V M H7 | 526W105S |

| Ref. No. | Description | Part No. |
|---|---|---|
| C 3053 | CHIP CERAMIC CAP. B K 0.01µF/25V | CHE1EKB0B103 |
| C 3054 | CHIP CERAMIC CAP. F Z 0.01µF/50V | CHE1JZB0F103 |
| C 3055 | ELECTROLYTIC CAP. 4.7µF/50V M H7 | 526W475S |
| C 3056 | ELECTROLYTIC CAP. 1µF/50V M H7 | 526W105S |
| C 3057 | CHIP CERAMIC CAP. B K 0.022µF/16V | CHE1CKB0B223 |
| C 3058 | SEMICONDUCTOR CAP. SR K 0.1µF/16V | 12Y6104S |
| C 3059 | ELECTROLYTIC CAP. 10µF/16V M H7 | 526T106S |
| C 3060 | ELECTROLYTIC CAP. 220µF/6.3V M H7 | 526R227S |
| C 3061 | CHIP CERAMIC CAP. F Z 0.1µF/16V | CHE1CZB0F104 |
| C 3062 | CHIP CERAMIC CAP. F Z 0.1µF/16V | CHE1CZB0F104 |
| C 3063 | ELECTROLYTIC CAP. 10µF/16V M H7 | 526T106S |
| C 3064 | CHIP CERAMIC CAP. F Z 0.01µF/50V | CHE1JZB0F103 |
| C 3065 | CHIP CERAMIC CAP. SL J 12PF/50V (8A-007/8A-027 only) | CHE1JJBSL120 |
| C 3065 | CHIP CERAMIC CAP. SL J 27PF/50V (9A-027S only) | CHE1JJBSL270 |
| C 3066 | CHIP CERAMIC CAP. SL J 22PF/50V ( 8A-007/8A-027 only) | CHE1JJBSL220 |
| C 3066 | CHIP CERAMIC CAP. SL J 27PF/50V (9A-027S only) | CHE1JJBSL270 |
| C 3067 | CHIP CERAMIC CAP. F Z 0.022µF/50V | CHE1JZB0F223 |
| C 3069 | CHIP CERAMIC CAP. F Z 0.01µF/50V | CHE1JZB0F103 |
| C 3071 | CHIP CERAMIC CAP. B K 0.022µF/16V | CHE1CKB0B223 |
| C 3072 | CHIP CERAMIC CAP. B K 0.022µF/16V | CHE1CKB0B223 |
| C 3073 | ELECTROLYTIC CAP. 10µF/16V M H7 | 526T106S |
| C 3076 | ELECTROLYTIC CAP. 4.7µF/50V M H7 | 526W475S |
| C 3077 | CERAMIC CAP. SL J 56PF/50V (9A-027S only) | 3S41560T |
| C 3081 | CERAMIC CAP. Y M 0.01µF/16V or<br>CERAMIC CAP. F Z 0.01µF/16V (9A-027S only) | 3Y4D103T<br>1220842T |
| C 3082 | CHIP CERAMIC CAP. F Z 0.01µF/50V (9A-027S only) | CHE1JZB0F103 |
| C 3083 | ELECTROLYTIC CAP. 100µF/6.3V M H7 (9A-027S only) | 526R107S |
| C 3084 | ELECTROLYTIC CAP. 2.2µF/50V M H7 (9A-027S only) | 526W225S |
| C 3085 | ELECTROLYTIC CAP. 3.3µF/50V M H7 (9A-027S only) | 526W335S |
| C 3086 | ELECTROLYTIC CAP. 3.3µF/50V M H7 (9A-027S only) | 526W335S |
| C 3510 | CHIP CERAMIC CAP. F Z 0.047µF/25V | CHE1EZB0F473 |
| C 4001 | CHIP CERAMIC CAP. SL J 220PF/50V | CHE1JJBSL221 |
| C 4002 | CHIP CERAMIC CAP. B K 0.01µF/25V | CHE1EKB0B103 |
| C 4003 | STACKED METALLIZED FILM CAP. 0.047µF/100V J | CT2A473MS001 |
| C 4004 | ELECTROLYTIC CAP. 100µF/16V M H7 | 526T107S |
| C 4005 | CHIP CERAMIC CAP. B K 0.01µF/25V | CHE1EKB0B103 |
| C 4009 | ELECTROLYTIC CAP. 22µF/16V M H7 | 526T226S |
| C 4011 | ELECTROLYTIC CAP. 4.7µF/50V M H7 | 526W475S |
| C 4013 | CHIP CERAMIC CAP. B K 0.0068µF/50V | CHE1JKB0B682 |
| C 4014 | ELECTROLYTIC CAP. 10µF/16V M H7 | 526T106S |
| C 4015 | CHIP CERAMIC CAP. B K 0.0068µF/50V | CHE1JKB0B682 |
| C 4016 | ELECTROLYTIC CAP. 22µF/16V M H7 | 526T226S |
| C 4017 | CHIP CERAMIC CAP. F Z 0.1µF/16V | CHE1CZB0F104 |
| C 4018 | CHIP CERAMIC CAP. B K 0.01µF/25V | CHE1EKB0B103 |
| C 4019 | ELECTROLYTIC CAP. 47µF/16V M H7 | 526T476S |
| C 4021 | CHIP CERAMIC CAP. B K 0.0022µF/50V | CHE1JKB0B222 |
| C 4023 | CHIP CERAMIC CAP. F Z 0.1µF/16V | CHE1CZB0F104 |
| C 4025 | CHIP CERAMIC CAP. B K 0.0027µF/50V | CHE1JKB0B272 |

| Ref. No. | Description | Part No. |
|---|---|---|
| C 5101 | CHIP CERAMIC CAP. SL J 150 pF/50V (9A-027S only) | CHE1JJBSL151 |
| C 5102 | SEMICONDUCTOR CAP. SR K 0.033μF/25V (9A-027S only) | 12Y2333S |
| C 5103 | SEMICONDUCTOR CAP. SR K 0.1μF/16V (9A-027S only) | 12Y6104S |
| C 6001 | CHIP CERAMIC CAP. CH J 33PF/50V | CHE1JJBCH330 |
| C 6002 | CHIP CERAMIC CAP. CH J 22PF/50V | CHE1JJBCH220 |
| C 6003 | CHIP CERAMIC CAP. F Z 0.01μF/50V | CHE1JZB0F103 |
| C 6004 | CHIP CERAMIC CAP. F Z 0.01μF/50V | CHE1JZB0F103 |
| C 6005 | CHIP CERAMIC CAP. F Z 0.001μF/50V | CHE1JZB0F102 |
| C 6006 | CHIP CERAMIC CAP. F Z 0.001μF/50V | CHE1JZB0F102 |
| C 6007 | ELECTROLYTIC CAP. 1μF/50V M H7 | 526W105S |
| C 6008 | ELECTROLYTIC CAP. 47μF/6.3V M H7 | 526R476S |
| C 6009 | ELECTROLYTIC CAP. 10μF/16V M H7 | 526T106S |
| C 6010 | CHIP CERAMIC CAP. F Z 0.1μF/16V | CHE1CZB0F104 |
| C 6011 | CERAMIC CAP. Y M 0.01μF/16V or | 3Y4D103T |
|  | CERAMIC CAP. F Z 0.01μF/16V | 1220842T |
| C 7001 | ELECTROLYTIC CAP. 470μF/6.3V M | 126A477S |
| C 7007 | CHIP CERAMIC CAP. B K 0.022μF/16V | CHE1CKB0B223 |
| C 7008 | CHIP CERAMIC CAP. B K 0.0022μF/50V | CHE1JKB0B222 |
| C 7010 | CHIP CERAMIC CAP. B K 0.0022μF/50V (8A-007/8A-027 only) | CHE1JKB0B222 |
| C 7012 | CHIP CERAMIC CAP. B K 0.001μF/50V (8A-007/8A-027 only) | CHE1JKB0B102 |
| C 7013 | CHIP CERAMIC CAP. F Z 0.047μF/25V | CHE1EZB0F473 |
| C 7016 | CHIP CERAMIC CAP. F Z 0.1μF/16V | CHE1CZB0F104 |
| C 7017 | CHIP CERAMIC CAP. F Z 0.1μF/16V (8A-007/8A-027 only) | CHE1CZB0F104 |
| C 7019 | CHIP CERAMIC CAP. B K 0.0022μF/50V | CHE1JKB0B222 |
| C 7020 | CHIP CERAMIC CAP. B K 0.0068μF/50V | CHE1JKB0B682 |
| C 7021 | ELECTROLYTIC CAP. 100μF/16V M H7 | 526T107S |
| C 7022 | MYLAR CAP. 0.1μF/50V J | 2254104S |
| C 7023 | MYLAR CAP. 0.047μF/50V J | 2254473S |
| C 7024 | STACKED METALLIZED FILM CAP. 0.047μF/50V J | 125U473S |
| C 7025 | CHIP CERAMIC CAP. SL J 56PF/50V | CHE1JJBSL560 |
| C 7026 | ELECTROLYTIC CAP. 47μF/35V M H7 | 526V476S |
| C 7028 | CHIP CERAMIC CAP. F Z 0.047μF/25V | CHE1EZB0F473 |
| C 7029 | ELECTROLYTIC CAP. 10μF/16V M H7 | 526T106S |
| C 7030 | CHIP CERAMIC CAP. B K 0.0022μF/50V | CHE1JKB0B222 |
| C 7031 | CHIP CERAMIC CAP. B K 0.001μF/50V (8A-007/8A-027 only) | CHE1JKB0B102 |
| C 7032 | CHIP CERAMIC CAP. B K 0.0022μF/50V (8A-007/8A-027 only) | CHE1JKB0B222 |
| C 7034 | ELECTROLYTIC CAP. 10μF/16V M H7 | 526T106S |
| C 7035 | CERAMIC CAP. F Z 0.022μF/25V or | 122Z122T |
|  | CERAMIC CAP. F Z 0.022μF/25V | 1220843T |
| C 7036 | CHIP CERAMIC CAP. B K 0.001μF/50V (8A-007/8A-027 only) | CHE1JKB0B102 |
| C 7501 | CHIP CERAMIC CAP. B K 470PF/50V | CHE1JKB0B471 |
| C 7502 | CHIP CERAMIC CAP. B K 0.0033μF/50V | CHE1JKB0B332 |
| C 7503 | CHIP CERAMIC CAP. F Z 0.01μF/50V | CHE1JZB0F103 |
| C 7504 | ELECTROLYTIC CAP. 10μF/16V M H7 | 526T106S |
| C 7507 | CERAMIC CAP. SL J 15PF/50V | 3S41150T |
|  | **CONNECTORS** |  |
| CN3001 | STRAIGHT PIN CONNECTOR, 15P | 1770635 |
| CN5101 | STRAIGHT PIN CONNECTOR, 9P (8A-007/8A-027 only) | 1770629 |
| CN6001 | HINGED PIN CONNECTOR 4P | J3TRJ04TG003 |
| CN6002 | STRAIGHT PIN CONNECTOR, 20P | 1770640 |
| CN6004 | STRAIGHT PIN CONNECTOR, 4P | 1770624 |
|  | **DIODES** |  |
| D 1001 | RECTIFIER DIODE 1A5-E | NDTZ000001A5 |
| D 1002 | RECTIFIER DIODE 1A5-E | NDTZ000001A5 |
| D 1003 | RECTIFIER DIODE 1A5-E | NDTZ000001A5 |
| D 1004 | RECTIFIER DIODE 1A5-E | NDTZ000001A5 |
| D 1005 | RECTIFIER DIODE EG01C or | QDPZ000EG01C |
|  | RECTIFIER DIODE ERA22-10Y2(TYPE I) | QDQZ0ERA2210 |
| D 1006 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 1008 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 1009 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 1012 | SWITCHING DIODE MA188 | QDTZ000MA188 |
| D 1013 | RECTIFIER DIODE RU3YX LF-C4 | QD7Z000RU3YX |
| D 1014 | SWITCHING DIODE MA188 | QDTZ000MA188 |
| D 1015 | SCHOTTKY BARRIER DIODE AK03 WK | QDSZ0000AK03 |
| D 1016 | ZENER DIODE UZ-30BSA | QDTA00UZ30BS |
| D 1017 | SWITCHING DIODE MA178 | QDTZ000MA178 |
| D 1501 | ZENER DIODE UZ-3.0BS or | QDTZ0UZ3R0BS |
|  | ZENER DIODE UZ-3.0BSA or | QDTA0UZ3R0BS |
|  | ZENER DIODE UZ-3.0BSB | QDTB0UZ3R0BS |
| D 1503 | ZENER DIODE UZ-12BSA or | QDTA00UZ12BS |
|  | ZENER DIODE UZ-12BSB | QDTB00UZ12BS |
| D 1505 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 1506 | ZENER DIODE UZ-9.1BSC | QDTC0UZ9R1BS |
| D 1507 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 1510 | SWITCHING DIODE MA188 | QDTZ000MA188 |
| D 2001 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 2002 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 2003 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 3001 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 3002 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 3005 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 3081 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M (9A-027S only) | QDTZ01N4148M |
| D 3082 | SWITCHING DIODE GMB01-BT (9A-027S only) | GMB01BT |

| Ref. No. | Description | Part No. |
|---|---|---|
| D 6001 | LED SIR-481ST3F or | QPPZSIR4813F |
|  | LED SID1K10CXM | QP4ZD1K10CXM |
| D 6002 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 6006 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
|  | (9A-027S only) |  |
| D 6008 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 6016 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 6017 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 6018 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 6019 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 6020 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
| D 7002 | ZENER DIODE UZ-8.2BSB | QDTB0UZ8R2BS |
| D 7003 | ZENER DIODE UZ-8.2BSB | QDTB0UZ8R2BS |
| D 7004 | ZENER DIODE UZ-8.2BSB | QDTB0UZ8R2BS |
| D 7501 | ZENER DIODE UZ-5.1BS | QDTZ0UZ5R1BS |
| D 7502 | ZENER DIODE UZ-5.1BS | QDTZ0UZ5R1BS |
| D 7505 | SWITCHING DIODE GMB01-BT or | GMB01BT |
|  | SWITCHING DIODE 1N4148M or | QDTZ01N4148M |
|  | SWITCHING DIODE 1N4148M | NDTZ01N4148M |
|  | **ICS** |  |
| IC1001 ⚠ | PHOTO COUPLER PC120F | QPEZ00PC120F |
| IC1002 | IC AN1431T-(NSC) or | QSBLA0ZMS001 |
|  | IC L5431 | QSZLA0ZSY004 |
| IC2001 | IC, SERVO MN6748FVDP | QSMEA0SMS001 |
| IC2002 | IC, OP-AMP. KIA324P DIP-14 | NSBLA0SJY002 |
| IC3001 | IC, VIDEO LA7347 | QSZLA0SSY006 |
| IC3003 | IC:CCD LC89925 | QSMLA0SSY004 |
| IC3081 | IC LA7311 (9A-027S only) | 14LQ528 |
| IC4001 | IC:AUDIO LA7282 | QSZLA0SSY003 |
| IC5101 | IC, VPS (9A-027S only) | 14D0739 |
| IC6001 | MICROCONTROLLER 8BIT | QSMQA0RNE043 |
| IC6002 | IC, RESET IC-PST529F-2 or | GR591399**** |
|  | IC, RESET 3.6V KIA7036P(T0-92) | NSBLA0TJY014 |
| IC6003 | IC TA7291S | 14LW342 |
| IC6004 | IC X24C01AP or | NSMMA0SXC002 |
|  | IC ST24C01B1 | NSMMA0ZSS002 |
|  | IC 24LC01B | NSMMA0SMH002 |
| IC7001 | ZENER DIODE UZT33MTA | QCTZ00UZT33M |
| IC7501 | IC:SWITCHING NJU4053BD | 14D0436 |
|  | **COILS** |  |
| L 1001 ⚠ | LINE FILTER FK0B160MH16 | 1170567 |
|  | (8A-007/8A-027 only) |  |
| L 1002 ⚠ | LINE FILTER 68MH LF-4D-683 | LLBG00ZKQ002 |
| L 1003 | LEAD INDUCTOR 22µFH-K | LLBD00PTU013 |
| L 1004 | INDUCTOR 22µFH-K | LLARKLUTU220 |
| L 1501 | INDUCTOR 100µFH-K-26T or | LLAXKDTKA101 |
|  | INDUCTOR 100µFH-K-26T | LLAXKATTU101 |
| L 3001 | INDUCTOR 22µFH-K-26T or | LLAXKDTKA220 |
|  | INDUCTOR 22µFH-K-26T | LLAXKATTU220 |
| L 3002 | INDUCTOR 47µFH-K-26T or | LLAXKDTKA470 |
|  | INDUCTOR 47µFH-K-26T | LLAXKATTU470 |
| L 3003 | INDUCTOR 33µFH-K-26T or | LLAXKDTKA330 |
|  | INDUCTOR 33µFH-K-26T | LLAXKATTU330 |
| L 3004 | INDUCTOR 22µFH-K-26T or | LLAXKDTKA220 |
|  | INDUCTOR 22µFH-K-26T | LLAXKATTU220 |
| L 3005 | INDUCTOR 100µFH-K-26T or | LLAXKDTKA101 |
|  | INDUCTOR 100µFH-K-26T | LLAXKATTU101 |
| L 3006 | INDUCTOR 82µFH-K-26T or | LLAXKDTKA820 |
|  | INDUCTOR 82µFH-K-26T | LLAXKATTU820 |
| L 3007 | INDUCTOR 180µFH-K-26T or | LLAXKDTKA181 |
|  | INDUCTOR 180µFH-K-26T | LLAXKATTU181 |
| L 3008 | INDUCTOR 330µFH-K-26T | LLAXKDTKA331 |
| L 3009 | INDUCTOR 330µFH-K-26T | LLAXKDTKA331 |
| L 3010 | INDUCTOR 330µFH-K-26T | LLAXKDTKA331 |
| L 3011 | INDUCTOR 15µFH-K-26T or | LLAXKDTKA150 |
|  | INDUCTOR 15µFH-K-26T | LLAXKATTU150 |
| L 3012 | INDUCTOR 56µFH-K-26T or | LLAXKDTKA560 |
|  | INDUCTOR 56µFH-K-26T | LLAXKATTU560 |
| L 3013 | INDUCTOR 68µFH-K-26T or | LLAXKDTKA680 |
|  | INDUCTOR 68µFH-K-26T | LLAXKATTU680 |
| L 3014 | INDUCTOR 27µFH-K-26T or | LLAXKDTKA270 |
|  | INDUCTOR 27µFH-K-26T | LLAXKATTU270 |
| L 3015 | INDUCTOR 39µFH-K-26T or | LLAXKDTKA390 |
|  | INDUCTOR 39µFH-K-26T | LLAXKATTU390 |
| L 3016 | INDUCTOR 47µFH-K-26T or | LLAXKDTKA470 |
|  | INDUCTOR 47µFH-K-26T | LLAXKATTU470 |
| L 3017 | INDUCTOR 100µFH-K-26T or | LLAXKDTKA101 |
|  | INDUCTOR 100µFH-K-26T | LLAXKATTU101 |
| L 3018 | INDUCTOR 10µFH-K-26T or | LLAXKDTKA100 |
|  | INDUCTOR 10µFH-K-26T | LLAXKATTU100 |
| L 3019 | INDUCTOR 10µFH-K | LLARKLUTU100 |
| L 3020 | INDUCTOR 22µFH-K-26T or | LLAXKDTKA220 |
|  | INDUCTOR 22µFH-K-26T | LLAXKATTU220 |
|  | (8A-007/8A-027 only) |  |
| L 3020 | INDUCTOR 15µFH-K-26T (9A-027S only) | LLAXKDTKA150 |
|  | INDUCTOR 15µFH-K-26T | LLAXKATTU150 |
| L 4001 | INDUCTOR 15MH-J | LLARJNSTE153 |
| L 7001 | INDUCTOR 10µFH-K-5FT or | LLARKDSKA100 |
|  | INDUCTOR 10µFH-K-5FT or | LLARKBSTU100 |
|  | INDUCTOR 10µFH-K-5FT | LLARKBSFS100 |
|  | (8A-007/8A-027 only) |  |
| L 7001 | INDUCTOR 100µFH-K-5FT or | LLARKDSKA101 |
|  | INDUCTOR 100µFH-K-5FT or | LLARKBSTU101 |
|  | INDUCTOR 100µFH-K-5FT | LLARKBSFS101 |
|  | (9A-027S only) |  |
| L7002 | PCB JUMPER (9A-027S only) | JW5.0T |
| L 7002 | INDUCTOR 10µFH-K-5FT or | LLARKDSKA100 |
|  | INDUCTOR 10µFH-K-5FT or | LLARKBSTU100 |
|  | INDUCTOR 10µFH-K-5FT | LLARKBSFS100 |
|  | (8A-007/8A-027 only) |  |
|  | **TRANSISTORS** |  |
| Q 1001 ⚠ | TRANSISTOR 2SC4204 | QQSZ02SC4204 |
| Q 1002 ⚠ | TRANSISTOR 2SC4517 or | QQPZ02SC4517 |
|  | TRANSISTOR 2SC3866 | QQPZ02SC3866 |

| Ref. No. | Description | Part No. |
|---|---|---|
| Q 1004 | RES. BUILT-IN TRANSISTOR 2SA1346 or | A1346Z |
| | RES. BUILT-IN TRANSISTOR KRA103M | NQSZ0KRA103M |
| Q 1501 | TRANSISTOR 2SC3246(K) | QQSK02SC3246 |
| Q 1502 | RES. BUILT-IN TRANSISTOR DTA143XS | A143XSZ |
| Q 1503 | TRANSISTOR 2SC536SP(E) or | C536SEZ |
| | TRANSISTOR 2SC536SP(F) or | C536SFZ |
| | TRANSISTOR 2SC3199(GR) | NQS402SC3199 |
| Q 1504 | TRANSISTOR 2SA608SP(E) or | A608SEZ |
| | TRANSISTOR 2SA608SP(F) or | A608SFZ |
| | TRANSISTOR 2SA1267(GR) | NQS402SA1267 |
| Q 1505 | RES. BUILT-IN TRANSISTOR 2SC3400 or | C3400Z |
| | RES. BUILT-IN TRANSISTOR KRC103M | NQSZ0KRC103M |
| Q 1506 | RES. BUILT-IN TRANSISTOR 2SC3400 or | C3400Z |
| | RES. BUILT-IN TRANSISTOR KRC103M | NQSZ0KRC103M |
| Q 1507 | RES. BUILT-IN TRANSISTOR DTA143XS | A143XSZ |
| Q 1508 | TRANSISTOR 2SA608SP(E) or | A608SEZ |
| | TRANSISTOR 2SA608SP(F) or | A608SFZ |
| | TRANSISTOR 2SA1267(GR) | NQS402SA1267 |
| Q 1509 | RES. BUILT-IN TRANSISTOR 2SC3400 or | C3400Z |
| | RES. BUILT-IN TRANSISTOR KRC103M | NQSZ0KRC103M |
| Q 2001 | RES. BUILT-IN TRANSISTOR 2SA1346 or | A1346Z |
| | RES. BUILT-IN TRANSISTOR KRA103M | NQSZ0KRA103M |
| Q 2002 | RES. BUILT-IN TRANSISTOR 2SA1346 or | A1346Z |
| | RES. BUILT-IN TRANSISTOR KRA103M | NQSZ0KRA103M |
| Q 2003 | RES. BUILT-IN TRANSISTOR 2SC3400 or | C3400Z |
| | RES. BUILT-IN TRANSISTOR KRC103M | NQSZ0KRC103M |
| Q 2004 | RES. BUILT-IN TRANSISTOR 2SC3400 or | C3400Z |
| | RES. BUILT-IN TRANSISTOR KRC103M | NQSZ0KRC103M |
| Q 3001 | TRANSISTOR 2SC2839(E) or | C2839EZ |
| | TRANSISTOR 2SC2839(F) or | C2839FZ |
| | TRANSISTOR 2SC3193(Y) | NQSY02SC3193 |
| Q 3002 | TRANSISTOR 2SC2839(E) or | C2839EZ |
| | TRANSISTOR 2SC2839(F) or | C2839FZ |
| | TRANSISTOR 2SC3193(Y) | NQSY02SC3193 |
| Q 3003 | TRANSISTOR 2SC2839(E) or | C2839EZ |
| | TRANSISTOR 2SC2839(F) or | C2839FZ |
| | TRANSISTOR 2SC3193(Y) | NQSY02SC3193 |
| Q 3004 | RES. BUILT-IN TRANSISTOR KRA109M or | NQSZ0KRA109M |
| | RES. BUILT-IN TRANSISTOR DTA144WS | A144WSZ |
| Q 3005 | TRANSISTOR 2SA608SP(E) or | A608SEZ |
| | TRANSISTOR 2SA608SP(F) or | A608SFZ |
| | TRANSISTOR 2SA1267(GR) | NQS402SA1267 |
| Q 3006 | TRANSISTOR 2SC536SP(E) or | C536SEZ |
| | TRANSISTOR 2SC536SP(F) or | C536SFZ |
| | TRANSISTOR 2SC3199(GR) | NQS402SC3199 |
| Q 3010 | TRANSISTOR 2SA608SP(E) or | A608SEZ |
| | TRANSISTOR 2SA608SP(F) or | A608SFZ |
| | TRANSISTOR 2SA1267(GR) | NQS402SA1267 |
| Q 3011 | TRANSISTOR 2SC536SP(E) or | C536SEZ |
| | TRANSISTOR 2SC536SP(F) or | C536SFZ |
| | TRANSISTOR 2SC3199(GR) | NQS402SC3199 |
| Q 3012 | TRANSISTOR 2SC2839(E) or | C2839EZ |
| | TRANSISTOR 2SC2839(F) or | C2839FZ |
| | TRANSISTOR 2SC3193(Y) | NQSY02SC3193 |
| Q 3013 | TRANSISTOR 2SA608SP(E) or | A608SEZ |
| | TRANSISTOR 2SA608SP(F) or | A608SFZ |
| | TRANSISTOR 2SA1267(GR) | NQS402SA1267 |
| Q 3014 | TRANSISTOR 2SA608SP(E) or | A608SEZ |
| | TRANSISTOR 2SA608SP(F) or | A608SFZ |

| Ref. No. | Description | Part No. |
|---|---|---|
| | TRANSISTOR 2SA1267(GR) | NQS402SA1267 |
| Q 3015 | RES. BUILT-IN TRANSISTOR KRA109M or | NQSZ0KRA109M |
| | RES. BUILT-IN TRANSISTOR DTA144WS | A144WSZ |
| Q 3016 | RES. BUILT-IN TRANSISTOR 2SC3400 or | C3400Z |
| | RES. BUILT-IN TRANSISTOR KRC103M | NQSZ0KRC103M |
| Q 3017 | TRANSISTOR 2SA608SP(E) or | A608SEZ |
| | TRANSISTOR 2SA608SP(F) or | A608SFZ |
| | TRANSISTOR 2SA1267(GR) | NQS402SA1267 |
| Q 3018 | TRANSISTOR 2SC536SP(E) or | C536SEZ |
| | TRANSISTOR 2SC536SP(F) or | C536SFZ |
| | TRANSISTOR 2SC3199(GR) | NQS402SC3199 |
| Q 3019 | RES. BUILT-IN TRANSISTOR 2SC3400 or | C3400Z |
| | RES. BUILT-IN TRANSISTOR KRC103M (9A-027S only) | NQSZ0KRC103M |
| Q 4001 | TRANSISTOR 2SC536SP(E) or | C536SEZ |
| | TRANSISTOR 2SC536SP(F) or | C536SFZ |
| | TRANSISTOR 2SC3199(GR) | NQS402SC3199 |
| Q 6001 | TRANSISTOR 2SD400(F) | D400FZ |
| Q 6002 | PHOTO TRANSISTOR PT380FBC | QP6ZPT380FBC |
| Q 6003 | PHOTO TRANSISTOR PT380FBC | QP6ZPT380FBC |
| Q 6006 | RES. BUILT-IN TRANSISTOR DTA143XS | A143XSZ |
| Q 7003 | TRANSISTOR 2SC536SP(E) or | C536SEZ |
| | TRANSISTOR 2SC536SP(F) or | C536SFZ |
| | TRANSISTOR 2SC3199(GR) | NQS402SC3199 |
| Q 7005 | TRANSISTOR 2SC3330S-AC or | Q2SC3330SAC0 |
| | TRANSISTOR 2SC3330T-AC or | Q2SC3330TAC0 |
| | TRANSISTOR 2SC3199(GR) | NQS402SC3199 |
| Q 7006 | RES. BUILT-IN TRANSISTOR DTA143XS | A143XSZ |
| Q 7007 | RES. BUILT-IN TRANSISTOR DTA143XS | A143XSZ |
| Q 7008 | RES. BUILT-IN TRANSISTOR DTA143XS | A143XSZ |
| | **RESISTORS** | |
| J 201 | CARBON RES. 1/4W J 100 Ω or | RCX4JZPZ0101 |
| | CARBON RES. 1/6W J 100 Ω | 132A101 |
| R 1001 | FIXED METAL OXIDE FILM RES. 2W J 4.7 Ω | RN024R7KE005 |
| R 1002 | FIXED METAL OXIDE FILM RES. 2W J 39K Ω | RN02JASK0393 |
| R 1003 | CARBON RES. 1/4W J 82K Ω | RCX4JATZ0823 |
| R 1004 | FIXED METAL OXIDE FILM RES. 1W J 120 Ω | RN01JASK0121 |
| R 1005 | CARBON RES. 1/4W J 68K Ω | RCX4JATZ0683 |
| R 1006 | FIXED METAL FILM RES. 1W J 1.2 Ω | RM01JASK01R2 |
| R 1008 | CHIP RES. 1/10W J 3.9K Ω | RRXAJBBZ0392 |
| R 1009 | CHIP RES. 1/10W J 470 Ω | RRXAJBBZ0471 |
| R 1011 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 1012 | CHIP RES. 1/10W J 220 Ω | RRXAJBBZ0221 |
| R 1013 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 1014 | CHIP RES. 1/10W G 2.4K Ω | RRXAGBBZ0242 |
| R 1015 | CHIP RES. 1/10W G 2.2K Ω | RRXAGBBZ0222 |
| R 1016 | CHIP RES. 1/10W J 22K Ω | RRXAJBBZ0223 |
| R 1017 | CHIP RES. 1/10W J 820 Ω | RRXAJBBZ0821 |
| R 1018 | FUSING RES. 1/2W J 10 Ω or | 5362100 |
| | FUSING RES. 1/2W J 10 Ω | RFX2100KA007 |
| R 1019 | CARBON RES. 1/4W J 82K Ω | RCX4JATZ0823 |
| R 1020 | CARBON RES. 1/4W J 82K Ω | RCX4JATZ0823 |
| R 1021 | CARBON RES. 1/4W J 82K Ω | RCX4JATZ0823 |
| R 1022 | CARBON RES. 1/4W J 68K Ω | RCX4JATZ0683 |
| R 1023 | CARBON RES. 1/4W J 68K Ω | RCX4JATZ0683 |
| R 1024 | CARBON RES. 1/4W J 68K Ω | RCX4JATZ0683 |

| Ref. No. | Description | Part No. |
|---|---|---|
| R 1025 | FIXED METAL OXIDE FILM RES. 2W J 43K Ω | RN02JASK0433 |
| R 1501 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 1502 | CARBON RES. 1/4W J 750 Ω or<br>CARBON RES. 1/6W J 750 Ω | RCX4JATZ0751<br>132A751T |
| R 1503 | CHIP RES. 1/10W J 560 Ω | RRXAJBBZ0561 |
| R 1504 | CARBON RES. 1/4W J 4.7K Ω | RCX4JATZ0472 |
| R 1505 | CARBON RES. 1/4W J 12K Ω | RCX4JATZ0123 |
| R 1506 | CHIP RES. 1/10W J 4.7K Ω | RRXAJBBZ0472 |
| R 1507 | CHIP RES. 1/10W J 4.7K Ω | RRXAJBBZ0472 |
| R 1508 | CHIP RES. 1/10W J 47K Ω | RRXAJBBZ0473 |
| R 1509 | CHIP RES. 1/10W J 4.7K Ω | RRXAJBBZ0472 |
| R 1511 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 1512 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 2001 | CHIP RES. 1/10W J 22K Ω | RRXAJBBZ0223 |
| R 2002 | CHIP RES. 1/10W J 39K Ω | RRXAJBBZ0393 |
| R 2003 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 2004 | CHIP RES. 1/10W J 4.7K Ω | RRXAJBBZ0472 |
| R 2005 | CHIP RES. 1/10W J 100K Ω | RRXAJBBZ0104 |
| R 2006 | CHIP RES. 1/10W J 56K Ω | RRXAJBBZ0563 |
| R 2007 | CHIP RES. 1/10W J 56K Ω | RRXAJBBZ0563 |
| R 2009 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 2010 | CHIP RES. 1/10W J 150K Ω | RRXAJBBZ0154 |
| R 2011 | CHIP RES. 1/10W J 150K Ω | RRXAJBBZ0154 |
| R 2012 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 2013 | CHIP RES. 1/10W J 47K Ω | RRXAJBBZ0473 |
| R 2014 | CHIP RES. 1/10W J 56K Ω | RRXAJBBZ0563 |
| R 2015 | CHIP RES. 1/10W J 56K Ω | RRXAJBBZ0563 |
| R 2016 | CHIP RES. 1/10W J 180K Ω | RRXAJBBZ0184 |
| R 2017 | CHIP RES. 1/10W J 56K Ω | RRXAJBBZ0563 |
| R 2018 | CHIP RES. 1/10W J 47K Ω | RRXAJBBZ0473 |
| R 2019 | CHIP RES. 1/10W J 150K Ω | RRXAJBBZ0154 |
| R 2020 | CHIP RES. 1/10W J 4.7K Ω | RRXAJBBZ0472 |
| R 2021 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 2022 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 2024 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 2025 | CHIP RES. 1/10W J 8.2K Ω | RRXAJBBZ0822 |
| R 2026 | CHIP RES. 1/10W J 22K Ω | RRXAJBBZ0223 |
| R 2027 | CHIP RES. 1/10W J 150 Ω | RRXAJBBZ0151 |
| R 2028 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 2029 | CHIP RES. 1/10W J 220 Ω | RRXAJBBZ0221 |
| R 2030 | CHIP RES. 1/10W J 100 Ω | RRXAJBBZ0101 |
| R 2031 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 2032 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 2033 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 2034 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 2035 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 2036 | CHIP RES. 1/10W J 47K Ω | RRXAJBBZ0473 |
| R 2037 | CHIP RES. 1/10W J 47K Ω | RRXAJBBZ0473 |
| R 2038 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 2039 | CHIP RES. 1/10W J 56K Ω | RRXAJBBZ0563 |
| R 2040 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 2043 | CHIP RES. 1/10W J 0 Ω | RRXAJBBZ0000 |
| R 2044 | CHIP RES. 1/10W J 4.7M Ω | RRXAJBBZ0475 |
| R 3001 | CHIP RES. 1/10W J 1.8K Ω | RRXAJBBZ0182 |
| R 3002 | CHIP RES. 1/10W J 390 Ω | RRXAJBBZ0391 |
| R 3003 | CHIP RES. 1/10W J 1.5K Ω | RRXAJBBZ0152 |
| R 3004 | CHIP RES. 1/10W J 820 Ω | RRXAJBBZ0821 |
| R 3005 | CHIP RES. 1/10W J 680 Ω | RRXAJBBZ0681 |
| R 3006 | CHIP RES. 1/10W J 390 Ω | RRXAJBBZ0391 |

| Ref. No. | Description | Part No. |
|---|---|---|
| R 3007 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 3008 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 3009 | CHIP RES. 1/10W J 3.9K Ω | RRXAJBBZ0392 |
| R 3010 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 3011 | CHIP RES. 1/10W J 8.2K Ω | RRXAJBBZ0822 |
| R 3012 | CHIP RES. 1/10W J 5.6K Ω | RRXAJBBZ0562 |
| R 3013 | CHIP RES. 1/10W J 27K Ω | RRXAJBBZ0273 |
| R 3015 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 3016 | CHIP RES. 1/10W J 470 Ω | RRXAJBBZ0471 |
| R 3017 | CHIP RES. 1/10W J 680 Ω | RRXAJBBZ0681 |
| R 3018 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 3019 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 3020 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 3021 | CHIP RES. 1/10W J 560 Ω | RRXAJBBZ0561 |
| R 3022 | CHIP RES. 1/10W J 470 Ω | RRXAJBBZ0471 |
| R 3023 | CHIP RES. 1/10W J 680 Ω | RRXAJBBZ0681 |
| R 3024 | CHIP RES. 1/10W J 3.9K Ω | RRXAJBBZ0392 |
| R 3025 | CHIP RES. 1/10W J 3.9K Ω | RRXAJBBZ0392 |
| R 3026 | CHIP RES. 1/10W J 1.5K Ω | RRXAJBBZ0152 |
| R 3027 | CHIP RES. 1/10W J 8.2K Ω | RRXAJBBZ0822 |
| R 3028 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 3029 | CHIP RES. 1/10W J 1.5K Ω | RRXAJBBZ0152 |
| R 3030 | CHIP RES. 1/10W J 1.5K Ω | RRXAJBBZ0152 |
| R 3031 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 3032 | CHIP RES. 1/10W J 470 Ω | RRXAJBBZ0471 |
| R 3033 | CHIP RES. 1/10W J 1.2K Ω | RRXAJBBZ0122 |
| R 3034 | CHIP RES. 1/10W J 220 Ω | RRXAJBBZ0221 |
| R 3035 | CHIP RES. 1/10W J 820 Ω | RRXAJBBZ0821 |
| R 3036 | CARBON RES. 1/4W J 560 Ω | RCX4JATZ0561 |
| R 3037 | CARBON RES. 1/4W J 560 Ω | RCX4JATZ0561 |
| R 3039 | CHIP RES. 1/10W J 1.8K Ω | RRXAJBBZ0182 |
| R 3040 | CHIP RES. 1/10W J 4.7K Ω | RRXAJBBZ0472 |
| R 3041 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 3042 | CHIP RES. 1/10W J 1.8K Ω | RRXAJBBZ0182 |
| R 3043 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 3044 | CHIP RES. 1/10W J 470 Ω | RRXAJBBZ0471 |
| R 3045 | CHIP RES. 1/10W J 470 Ω | RRXAJBBZ0471 |
| R 3046 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 3047 | CHIP RES. 1/10W J 560 Ω | RRXAJBBZ0561 |
| R 3048 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 3049 | CHIP RES. 1/10W J 390 Ω | RRXAJBBZ0391 |
| R 3050 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 3051 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 3052 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 3053 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 3054 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 3055 | CHIP RES. 1/10W J 1M Ω | RRXAJBBZ0105 |
| R 3056 | CHIP RES. 1/10W J 8.2K Ω | RRXAJBBZ0822 |
| R 3057 | CHIP RES. 1/10W J 4.7K Ω | RRXAJBBZ0472 |
| R 3058 | CHIP RES. 1/10W J 8.2K Ω | RRXAJBBZ0822 |
| R 3059 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 3060 | CHIP RES. 1/10W J 18K Ω | RRXAJBBZ0183 |
| R 3061 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 3062 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 3063 | CHIP RES. 1/10W J 1.2K Ω | RRXAJBBZ0122 |
| R 3065 | CHIP RES. 1/10W J 820 Ω | RRXAJBBZ0821 |
| R 3066 | CHIP RES. 1/10W J 22K Ω | RRXAJBBZ0223 |
| R 3067 | CHIP RES. 1/10W J 3.9K Ω | RRXAJBBZ0392 |
| R 3069 | CHIP RES. 1/10W J 22K Ω | RRXAJBBZ0223 |
| R 3070 | CHIP RES. 1/10W J 8.2K Ω | RRXAJBBZ0822 |

| Ref. No. | Description | Part No. |
|---|---|---|
| R 3074 | CHIP RES. 1/10W J 270 Ω | RRXAJBBZ0271 |
| R 3081 | CHIP RES. 1/10W J 27K Ω (9A-027S only) | RRXAJBBZ0272 |
| R 3083 | CHIP RES. 1/10W J 1M Ω (9A-027S only) | RRXAJBBZ0105 |
| R 3085 | CHIP RES. 1/10W J 820 Ω (9A-027S only) | RRXAJBBZ0821 |
| R 3087 | CHIP RES. 1/10W J 1M Ω (9A-027S only) | RRXAJBBZ0105 |
| R 3088 | CHIP RES. 1/10W J 22K Ω (9A-027S only) | RRXAJBBZ0223 |
| R 3089 | CHIP RES. 1/10W J 820 Ω (9A-027S only) | RRXAJBBZ0821 |
| R 3090 | CHIP RES. 1/10W J 2.7K Ω (9A-027S only) | RRXAJBBZ0272 |
| R 3091 | CHIP RES. 1/10W J 2.2K Ω (9A-027S only) | RRXAJBBZ0222 |
| R 4001 | CHIP RES. 1/10W J 47 Ω | RRXAJBBZ0470 |
| R 4002 | CHIP RES. 1/10W J 6.8K Ω | RRXAJBBZ0682 |
| R 4003 | CARBON RES. 1/4W J 22 Ω or | RCX4JATZ0220 |
|  | CARBON RES. 1/6W J 22 Ω | 132A220T |
| R 4004 | CHIP RES. 1/10W J 4.7 Ω | RRXAJBBZ04R7 |
| R 4005 | CHIP RES. 1/10W J 22K Ω | RRXAJBBZ0223 |
| R 4006 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 4007 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 4009 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 4010 | CHIP RES. 1/10W J 1.2K Ω | RRXAJBBZ0122 |
| R 4011 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 4012 | CHIP RES. 1/10W J 150 Ω | RRXAJBBZ0151 |
| R 4014 | CHIP RES. 1/10W J 15K Ω | RRXAJBBZ0153 |
| R 4015 | CHIP RES. 1/10W J 6.8K Ω | RRXAJBBZ0682 |
| R 4017 | CHIP RES. 1/10W J 2.2M Ω | RRXAJBBZ0225 |
| R 4018 | CHIP RES. 1/10W J 330K Ω | RRXAJBBZ0334 |
| R 4020 | CHIP RES. 1/10W J 120 Ω | RRXAJBBZ0121 |
| R 4021 | CHIP RES. 1/10W J 33K Ω | RRXAJBBZ0333 |
| R 4022 | CHIP RES. 1/10W J 100 Ω | RRXAJBBZ0101 |
| R 4023 | CHIP RES. 1/10W J 3.9K Ω | RRXAJBBZ0392 |
| R 4024 | CHIP RES. 1/10W J 12K Ω | RRXAJBBZ0123 |
| R 5101 | CHIP RES. 1/10W J 2.2K Ω (9A-027S only) | RRXAJBBZ0222 |
| R 5102 | CHIP RES. 1/10W J 1M Ω (9A-027S only) | RRXAJBBZ0105 |
| R 5103 | CHIP RES. 1/10W J 100K Ω (9A-027S only) | RRXAJBBZ0104 |
| R 5104 | CHIP RES. 1/10W J 820K Ω (9A-027S only) | RRXAJBBZ0824 |
| R 5105 | CHIP RES. 1/10W J 5.1K Ω (9A-027S only) | RRXAJBBZ0512 |
| R 5107 | CHIP RES. 1/10W J 100 Ω (9A-027S only) | RRXAJBBZ0101 |
| R 5110 | CHIP RES. 1/10W J 820K Ω (9A-027S only) | RRXAJBBZ0824 |
| R 6001 | CHIP RES. 1/10W J 2.7K Ω | RRXAJBBZ0272 |
| R 6002 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 6003 | CHIP RES. 1/10W J 1.5K Ω | RRXAJBBZ0152 |
| R 6004 | CHIP RES. 1/10W J 2.2K Ω | RRXAJBBZ0222 |
| R 6005 | CHIP RES. 1/10W J 3.9K Ω | RRXAJBBZ0392 |
| R 6006 | CHIP RES. 1/10W J 8.2K Ω | RRXAJBBZ0822 |
| R 6007 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6008 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6009 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6010 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6011 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6012 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6013 | CARBON RES. 1/4W J 2.2K Ω or | RCX4JATZ0222 |
|  | CARBON RES. 1/6W J 2.2K Ω | 132A222T |
| R 6014 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6015 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 6016 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6018 | CARBON RES. 1/4W J 10K Ω or | RCX4JATZ0103 |
|  | CARBON RES. 1/6W J 10K Ω | 132A103T |
| R 6019 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6020 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6025 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6026 | CHIP RES. 1/10W J 47K Ω | RRXAJBBZ0473 |

| Ref. No. | Description | Part No. |
|---|---|---|
| R 6027 | CHIP RES. 1/10W J 1.5K Ω | RRXAJBBZ0152 |
| R 6028 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6029 | CHIP RES. 1/10W J 330K Ω | RRXAJBBZ0334 |
| R 6030 | CARBON RES. 1/4W J 47K Ω or | RCX4JATZ0473 |
|  | CARBON RES. 1/6W J 47K Ω | 132A473T |
| R 6031 | CARBON RES. 1/4W J 10 Ω | RCX4JATZ0100 |
| R 6032 | CARBON RES. 1/4W J 1 Ω | RCX4JATZ0010 |
| R 6033 | CHIP RES. 1/10W J 1.8M Ω | RRXAJBBZ0185 |
| R 6034 | CHIP RES. 1/10W J 1.8M Ω | RRXAJBBZ0185 |
| R 6035 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6037 | CHIP RES. 1/10W J 7.5K Ω | RRXAJBBZ0752 |
| R 6039 | CHIP RES. 1/10W J 100 Ω | RRXAJBBZ0101 |
| R 6041 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6042 | CHIP RES. 1/10W J 180 Ω | RRXAJBBZ0181 |
| R 6043 | CHIP RES. 1/10W J 8.2K Ω | RRXAJBBZ0822 |
| R 6044 | CARBON RES. 1/4W J 10 Ω | RCX4JATZ0100 |
| R 6045 | CARBON RES. 1/4W J 10 Ω | RCX4JATZ0100 |
| R 6047 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 6049 | CARBON RES. 1/4W J 6.2 Ω | RCX4JATZ06R2 |
| R 6061 | CHIP RES. 1/10W J 0 Ω | RRXAJBBZ0000 |
| R 6063 | CHIP RES. 1/10W J 0 Ω | RRXAJBBZ0000 |
| R 6069 | CARBON RES. 1/4W J 6.2 Ω | RCX4JATZ06R2 |
| R 6070 | CHIP RES. 1/10W J 5.6K Ω | RRXAJBBZ0562 |
| R 6071 | CARBON RES. 1/4W J 1 Ω | RCX4JATZ0010 |
| R 6072 | CARBON RES. 1/4W J 1 Ω | RCX4JATZ0010 |
| R 6074 | CHIP RES. 1/10W J 1K Ω | RRXAJBBZ0102 |
| R 7001 | CARBON RES. 1/4W J 560K Ω or | RCX4JATZ0564 |
|  | CARBON RES. 1/6W J 560K Ω | 132A564T |
| R 7002 | CHIP RES. 1/10W J 560K Ω | RRXAJBBZ0564 |
| R 7004 | CHIP RES. 1/10W J 15K Ω | RRXAJBBZ0153 |
| R 7007 | CHIP RES. 1/10W J 39K Ω | RRXAJBBZ0393 |
| R 7008 | CHIP RES. 1/10W J 27K Ω | RRXAJBBZ0273 |
| R 7009 | CHIP RES. 1/10W J 27K Ω | RRXAJBBZ0273 |
| R 7010 | CHIP RES. 1/10W J 15K Ω | RRXAJBBZ0153 |
| R 7011 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 7012 | CHIP RES. 1/10W J 33K Ω | RRXAJBBZ0333 |
| R 7013 | CHIP RES. 1/10W J 47K Ω | RRXAJBBZ0473 |
| R 7016 | CARBON RES. 1/4W J 1.5K Ω | RCX4JATZ0152 |
| R 7019 | CHIP RES. 1/10W J 100K Ω | RRXAJBBZ0104 |
| R 7020 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 7501 | CHIP RES. 1/10W J 820 Ω | RRXAJBBZ0821 |
| R 7502 | CHIP RES. 1/10W J 820 Ω | RRXAJBBZ0821 |
| R 7503 | CHIP RES. 1/10W J 22K Ω | RRXAJBBZ0223 |
| R 7504 | CHIP RES. 1/10W J 22K Ω | RRXAJBBZ0223 |
| R 7507 | CHIP RES. 1/10W J 68 Ω | RRXAJBBZ0680 |
| R 7508 | CHIP RES. 1/10W J 150 Ω | RRXAJBBZ0151 |
| R 7509 | CHIP RES. 1/10W J 150 Ω | RRXAJBBZ0151 |
| R 7510 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 7511 | CHIP RES. 1/10W J 22K Ω | RRXAJBBZ0223 |
| R 7512 | CHIP RES. 1/10W J 10K Ω | RRXAJBBZ0103 |
| R 7513 | CHIP RES. 1/10W J 100K Ω | RRXAJBBZ0104 |
| R 7514 | CHIP RES. 1/10W J 5.6K Ω | RRXAJBBZ0562 |
| R 7515 | CHIP RES. 1/10W J 75 Ω | RRXAJBBZ0750 |
| R 7516 | CHIP RES. 1/10W J 75 Ω | RRXAJBBZ0750 |
|  | **SWITCHES** |  |
| SW6002 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW6003 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |

| Ref. No. | Description | Part No. |
|---|---|---|
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW6004 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW6005 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW6006 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW6007 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW6008 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW6009 | PUSH SWITCH SPPB61 | SSP0102AL001 |
| SW6010 | PUSH SWITCH SW-112-3 | SSP0101KB001 |
| SW6011 | PUSH SWITCH SKHMPF or | SSP0101AL002 |
|  | PUSH SWITCH HKW0602-01-010 | SSP0101HD001 |
|  | **TRANSFORMERS** |  |
| T 1001 ⚠ | PULSE TRANS FT-28C75A or | LTT00EPKM001 |
|  | PULSE TRANS S0930AX | LTT00EPSA003 |
| T 4001 | COIL, OSC AUDIO or | 1130686 |
|  | COIL, OSC AUDIO or | 113M686 |
|  | COIL, OSC AUDIO | 113D686 |
|  | **VARIABLE RESISTORS** |  |
| VR2001 | CARBON P.O.T. 100K Ω or | 238A402Y |
|  | CARBON P.O.T. 100K Ω or | 238A427Y |
|  | CARBON P.O.T. 100K Ω or | 238N497Y |
|  | CARBON P.O.T. 100K Ω B | VRCB104KA010 |
| VR3001 | CARBON P.O.T. 4.7K Ω or | 238A394Y |
|  | CARBON P.O.T. 5K Ω or | 238A422Y |
|  | CARBON P.O.T. 5K Ω or | 238N492Y |
|  | CARBON P.O.T. 5K Ω B | VRCB502KA010 |
| VR3003 | CARBON P.O.T. 4.7K Ω or | 238A394Y |
|  | CARBON P.O.T. 5K Ω or | 238A422Y |
|  | CARBON P.O.T. 5K Ω or | 238N492Y |
|  | CARBON P.O.T. 5K Ω B | VRCB502KA010 |
| VR3004 | CARBON P.O.T. 4.7K Ω or | 238A394Y |
|  | CARBON P.O.T. 5K Ω or | 238A422Y |
|  | CARBON P.O.T. 5K Ω or | 238N492Y |
|  | CARBON P.O.T. 5K Ω B | VRCB502KA010 |
| VR4001 | CARBON P.O.T. 100K Ω or | 238A402Y |
|  | CARBON P.O.T. 100K Ω or | 238A427Y |
|  | CARBON P.O.T. 100K Ω or | 238N497Y |
|  | CARBON P.O.T. 100K Ω B | VRCB104KA010 |
|  | **MISCELLANEOUS** |  |
| 2B 4 | HOLDER, F.I.P.(L) (9A-027S only) | 0VM301820 |
| 2B 5 | HOLDER, F.I.P.(R) (9A-027S only) | 0VM301821 |
| 2B 6 | HOLDER, REEL SENSOR (9A-027S only) | 0VM200965B |
| 2B 8 | BUSH, LED (9A-027S only) | 6N50114 |
| 2B 11 | SPACER(CASSETTE IN SW) (9A-027S only) | 0VM404984 |
| 2L 071 | SCREW, S-TIGHT, BIND HEAD M3X5 | GBMS3050 |
| A 17 | JACK BOARD PAL-G | 0VM201316 |
| AC1001 ⚠ | AC CORD LA-1517 (8A-007/8A-027 only) | WAE0202LW011 |
| AC1001 ⚠ | AC CORD EP- 63- E01 or | WAE0202NW008 |
|  | AC CORD LA-1296-2 (9A-027S only) | WAE0202LW006 |
| DL3001 | COMB FILTER 4.433619MHZ or | 1813274 |

| Ref. No. | Description | Part No. |
|---|---|---|
|  | COMB FILTER 4.433619MHZ | 1813522 |
| F 1001 ⚠ | FUSE T1.60A/250V or | 1790483 |
|  | FUSE T1.60A/250V | 1790994 |
| FH1001 | FUSE HOLDER PFC5000-0202 or | XH01Z00SR001 |
|  | FUSE HOLDER CNT47-0003 | XH03Z00JC001 |
| FH1002 | FUSE HOLDER PFC5000-0202 or | XH01Z00SR001 |
|  | FUSE HOLDER CNT47-0003 | XH03Z00JC001 |
| FP6001 | F.I.P. 10-BT-121G | TVFD1C0FT025 |
| JK7501 | SKIRT JACK, 21P CSS5021-1701R | JGZL210SR001 |
| S 6001 | REEL SENSOR SG-211L | PCZLAZZKK003 |
| TU7001 | TUNER/IF/CONV. UNIT EC-RB-0162 (8A-007/8A-027 only) | UTUNPLBNE009 |
| TU7001 | TUNER/IF/CONV. UNIT EC-RB-0163 (9A-027S only) | UTUNPLBNE010 |
| X 3001 | X'TAL 4.433619MHZ or | 1811366 |
|  | X'TAL 4.433619MHZ | 1811388 |
| X 6001 | CERAMIC RESONATOR 4.19MHZ | FY0415TMS002 |
| X 6002 | X'TAL 32KHZ(10PPM) | 1811350 |

## FUNCTION (MCV-B) BLOCK (8A-007/8A-027 only)

| Ref. No. | Description | Part No. |
|---|---|---|
|  | FUNCTION CBA ASS'Y<br>CONSISTS OF THE FOLLOWING: | 0VSA06168 |
|  | **CONNECTOR** |  |
| CN5501 | HINGED SOCKET CONNECTOR 4P | JCTRG04TG002 |
|  | **RESISTORS** |  |
| R 5506 | CARBON RES. 1/4W J 1K Ω | RCX4JATZ0102 |
| R 5505 | CARBON RES. 1/4W J 1.5K Ω | RCX4JATZ0152 |
| R 5504 | CARBON RES. 1/4W J 2.2K Ω | RCX4JATZ0222 |
| R 5501 | CARBON RES. 1/4W J 2.7K Ω | RCX4JATZ0272 |
| R 5507 | CARBON RES. 1/4W J 27K Ω | RCX4JATZ0273 |
| R 5502 | CARBON RES. 1/4W J 3.9K Ω | RCX4JATZ0392 |
| R 5503 | CARBON RES. 1/4W J 8.2K Ω | RCX4JATZ0822 |
|  | **SWITCHES** |  |
| SW5501 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5502 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5503 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5504 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5505 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5506 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5507 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
|  | PUSH SWITCH SKHVBH or | SST0101AL011 |
|  | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |

## FUNCTION (MCV-B) BLOCK (9A-027S only)

| Ref. No. | Description | Part No. |
|---|---|---|
| | FUNCTION CBA ASS'Y<br>CONSISTS OF THE FOLLOWING: | 0VSA06155 |
| | **CONNECTOR** | |
| CN5501 | HINGED SOCKET CONNECTOR 4P | JCTRG04TG002 |
| | **RESISTORS** | |
| R 5501 | CARBON RES. 1/4W J 2.7K Ω | RCX4JATZ0272 |
| R 5502 | CARBON RES. 1/4W J 3.9K Ω | RCX4JATZ0392 |
| R 5503 | CARBON RES. 1/4W J 8.2K Ω | RCX4JATZ0822 |
| R 5504 | CARBON RES. 1/4W J 2.2K Ω | RCX4JATZ0222 |
| R 5505 | CARBON RES. 1/4W J 1.5K Ω | RCX4JATZ0152 |
| R 5506 | CARBON RES. 1/4W J 1K Ω | RCX4JATZ0102 |
| R 5507 | CARBON RES. 1/4W J 27K Ω | RCX4JATZ0273 |
| | **SWITCHES** | |
| SW5501 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
| | PUSH SWITCH SKHVBH or | SST0101AL011 |
| | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5502 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
| | PUSH SWITCH SKHVBH or | SST0101AL011 |
| | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5503 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
| | PUSH SWITCH SKHVBH or | SST0101AL011 |
| | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5504 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
| | PUSH SWITCH SKHVBH or | SST0101AL011 |
| | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5505 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
| | PUSH SWITCH SKHVBH or | SST0101AL011 |
| | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5506 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
| | PUSH SWITCH SKHVBH or | SST0101AL011 |
| | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |
| SW5507 | PUSH SWITCH EVQ-21509K or | SST0101MS011 |
| | PUSH SWITCH SKHVBH or | SST0101AL011 |
| | PUSH SWITCH SOR-142HS R66-4519 | SST0101MM011 |

## REMOTE SENSOR (MCV-C) BLOCK

| Ref. No. | Description | Part No. |
|---|---|---|
| | REMOTE SENSOR (MCV-C) BLOCK<br>CONSISTS OF THE FOLLOWING: | ----------- |
| RS6001 | REMOTE CONTROL UNIT NJH32H367A | USESJRSJR004 |

## REMOTE SENSOR (MCV-D) BLOCK

| Ref. No. | Description | Part No. |
|---|---|---|
| | REMOTE SENSOR (MCV-D) BLOCK<br>CONSISTS OF THE FOLLOWING: | ---------- |
| RS6001 | REMOTE CONTROL UNIT HC-278N or | USESJRSKK008 |
| | REMOTE CONTROL UNIT GP1U582X | USESJRSSH009 |

## EXCHANGEABILITY OF REMOTE SENSOR CBA FOR PART NO. OF REMOTE SENSOR

| RS6001 (Remote Sensor) | | Remote Sensor CBA No. | |
|---|---|---|---|
| Part No. | Maker No. | BK4100F01001C | BK41600F01001D |
| USERJRSKK008 | HC-278N | × | × |
| USERJRSSH009 | GP1U582X | × | × |
| USERJRSJR004 | NJH32H367A | ○ | ○ |

Note: CBA No.'s are shown in Remote Sensor Top/Bottom View.

## SERVICE CONNECTOR (MCV-E) BLOCK

| Ref. No. | Description | Part No. |
|---|---|---|
| | SERVICE CONNECTOR (MCV-E) BLOCK<br>CONSISTS OF THE FOLLOWING: | ----------- |
| CN6004 | ANGLE SOCKET CONNECTOR, 3P | 1770598 |

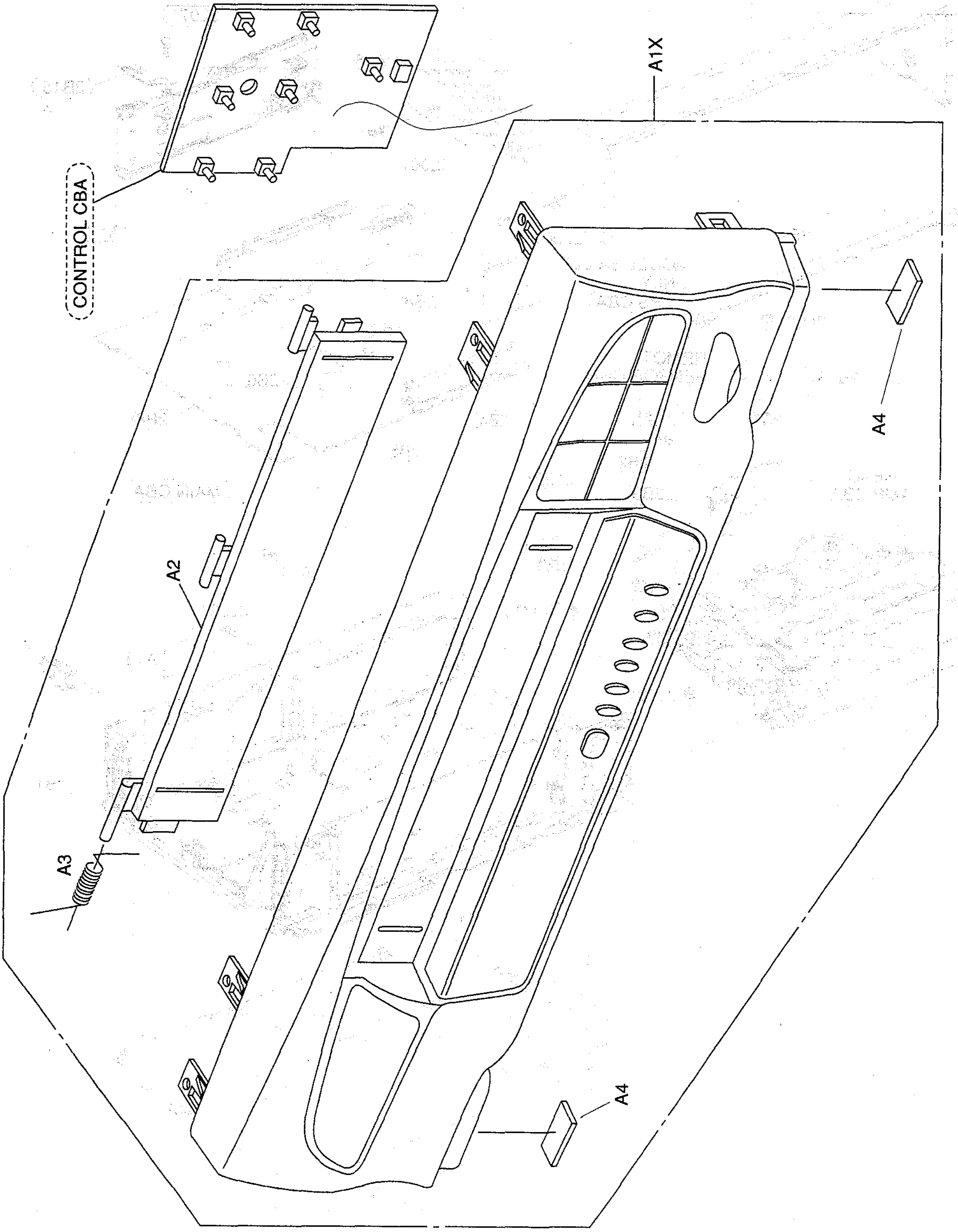
## VPS CBA

| Ref. No. | Description | Part No. |
|---|---|---|
| | VPS CBA ASS'Y (8A-027/9A-027S only) | 0VSA06189 |
| | VPS CBA ASS'Y (9A-027S only)<br>COMSISTS OF THE FOLLOWING: | 0VSA06157 |
| | **CAPACITROS** | |
| C 5101 | CERAMIC CAP. B J 0.001µF/50V | 3B41102T |
| C 5102 | CERAMIC CAP. X K 0.0047µF/16V | 3X4C472T |
| C 5103 | CERAMIC CAP. B J 470PF/50V | 3B41471T |
| C 5104 | SEMICONDUCTOR CAP. SR K 0.1µF/25V | 12Y2104S |
| C 5106 | MYLAR CAP. 0.022µF/50V J | 2254223S |
| C 5108 | MYLAR CAP. 0.0047µF/50V J | 2254472S |
| | **DIODE** | |
| D 5101 | SWITCHING DIODE GMB01-BT or | GMB01BT |
| | SWITCHING DIODE 1N4148M<br>(9A-027S only) | QDTZ01N4148M |
| | **RESISTORS** | |
| R 5101 | CARBON RES. 1/4W J 4.7K Ω or | RCX4JATZ0472 |
| | CARBON RES. 1/6W J 4.7K Ω | 132A472T |
| R 5104 | CARBON RES. 1/4W J 75K Ω or | RCX4JATZ0753 |
| | CARBON RES. 1/6W J 75K Ω | 132A753T |
| R 5105 | CARBON RES. 1/4W J 8.2K Ω or | RCX4JATZ0822 |
| | CARBON RES. 1/6W J 8.2K Ω | 132A822T |
| | **IC** | |
| IC5101 | IC, VPS SAA4700 | 14D0738 |
| | **CONNECTOR** | |
| CN5101 | ANGLE SOCKET CONNECTOR, 9P | 1770645 |

# EXPLODED VIEWS

## Front Panel

* ( ) Marked Parts see the Electrical Parts List.

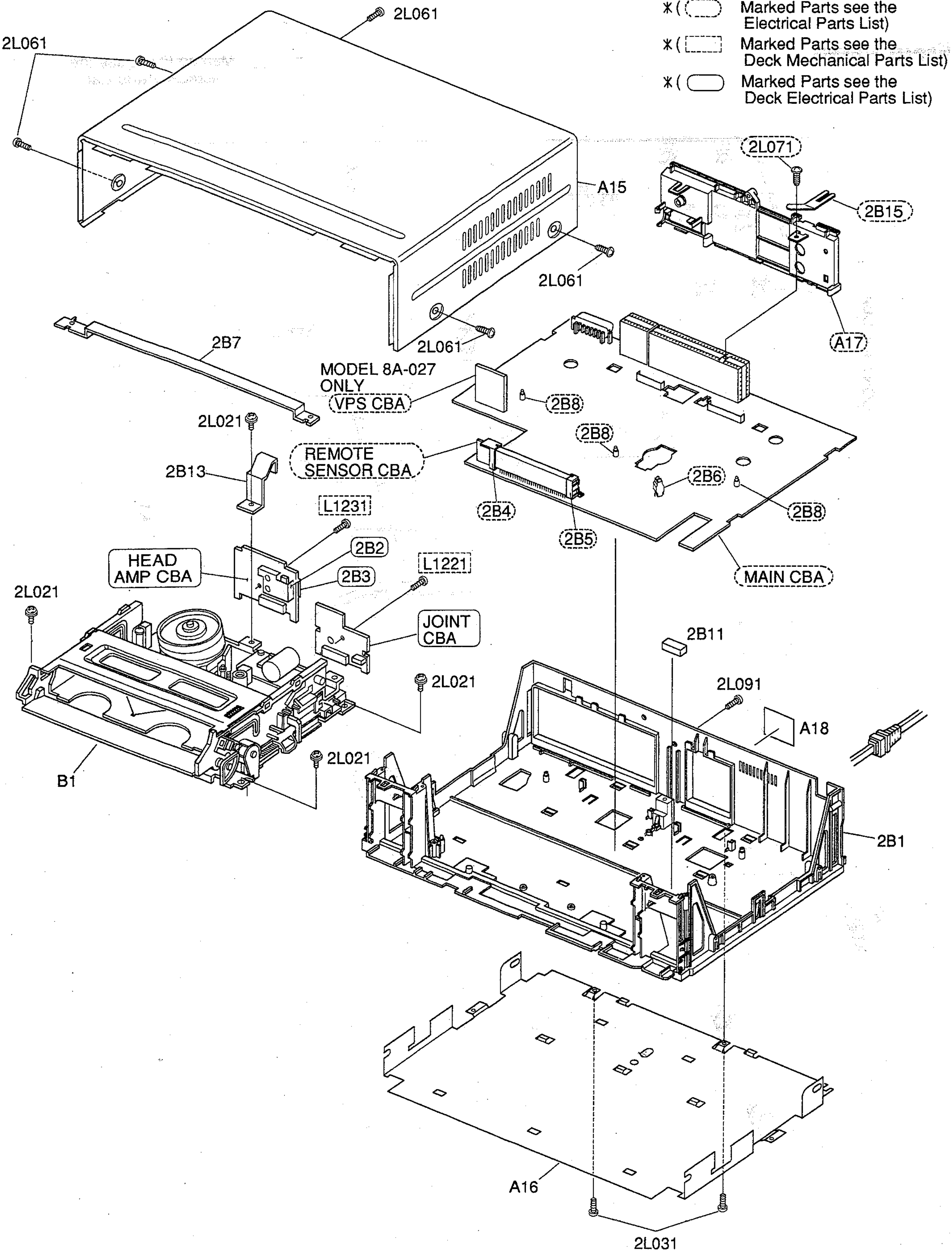

A1X
CONTROL CBA
A2
A3
A4
A4

## Cabinet (8A-007,8A-027)

*( ) Marked Parts see the Electrical Parts List)

*( ) Marked Parts see the Deck Mechanical Parts List)

*( ) Marked Parts see the Deck Electrical Parts List)



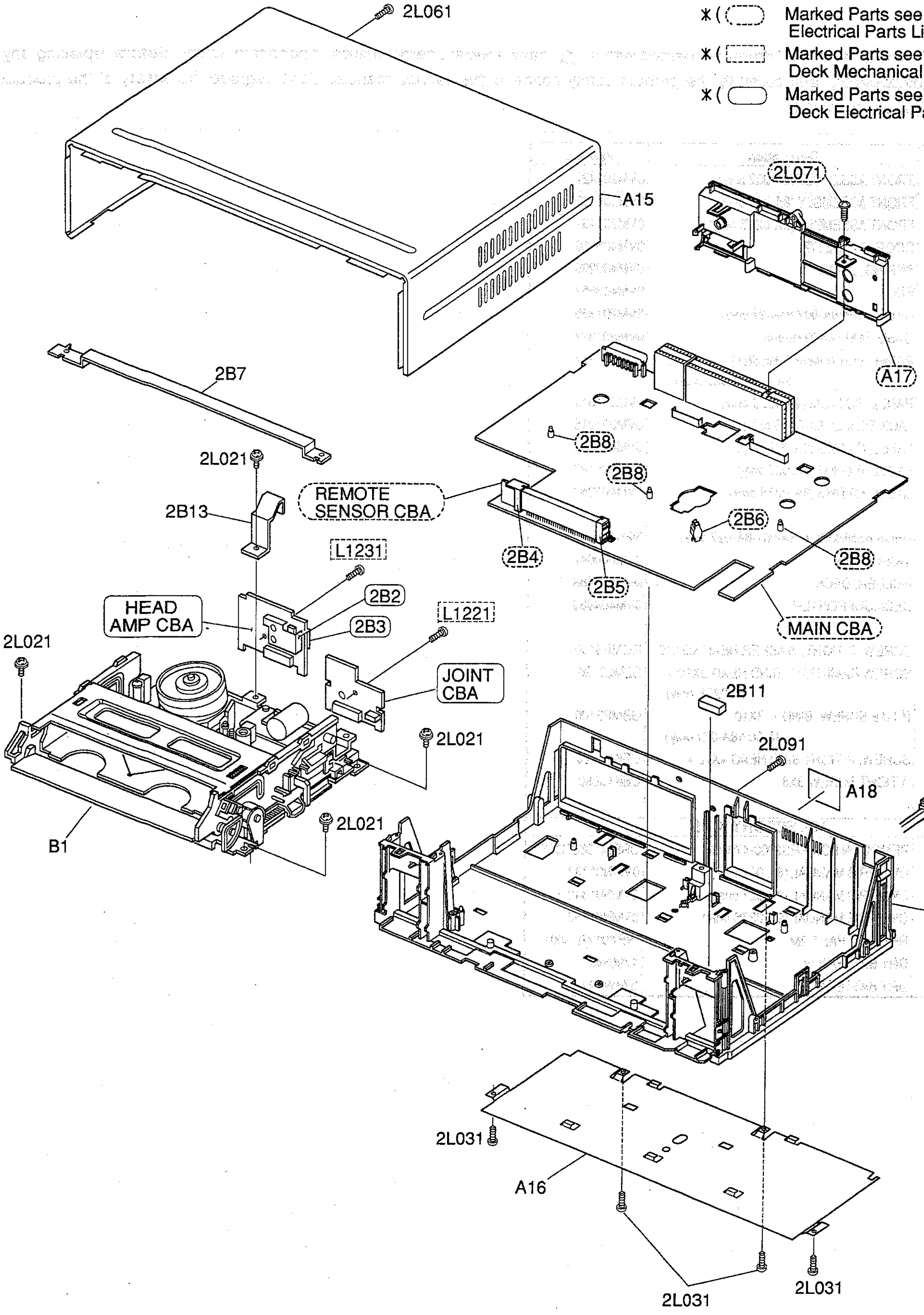
2L061
2L061
A15
2L071
2B15
2L061
2L061
A17
2B7
MODEL 8A-027 ONLY
VPS CBA
2B8
2B8
2L021
REMOTE SENSOR CBA
2B6
2B13
2B4
2B5
2B8
L1231
2B2
HEAD AMP CBA
2B3
L1221
MAIN CBA
2L021
JOINT CBA
2B11
2L021
2L091
A18
2L021
B1
2B1
A16
2L031

# Cabinet (9A-027S)

✱( ⬭ Marked Parts see the Electrical Parts List)

✱( ▭ Marked Parts see the Deck Mechanical Parts List)

✱( ▢ Marked Parts see the Deck Electrical Parts List)

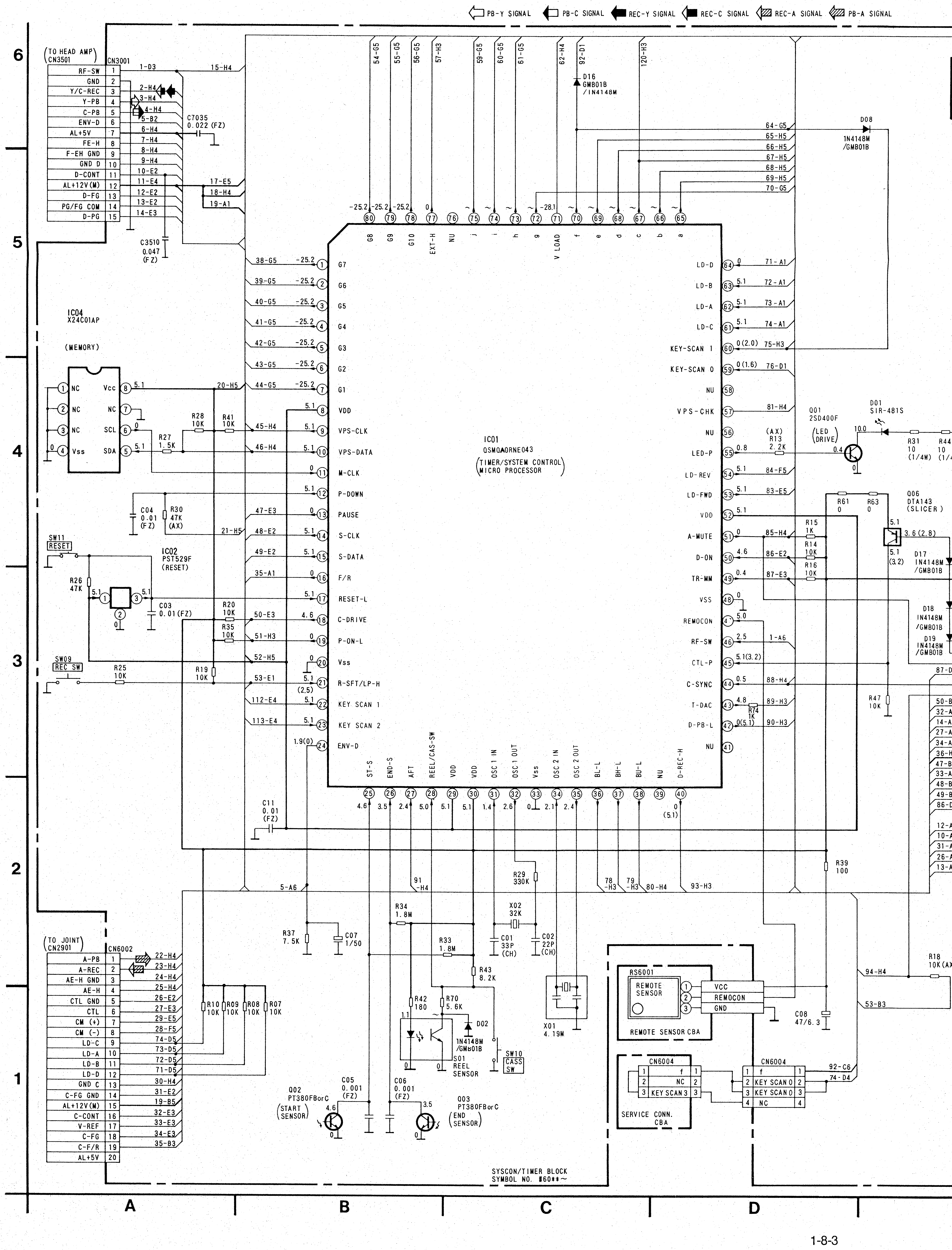

2L061
A15
2L071
A17
2B7
2B8
2B8
2B8
2B6
MAIN CBA
2L021
REMOTE SENSOR CBA
2B13
L1231
2B4
2B5
HEAD AMP CBA
2B2
2B3
L1221
JOINT CBA
2L021
2B11
2L021
2L091
A18
2L021
B1
2B1
2L031
A16
2L031
2L031

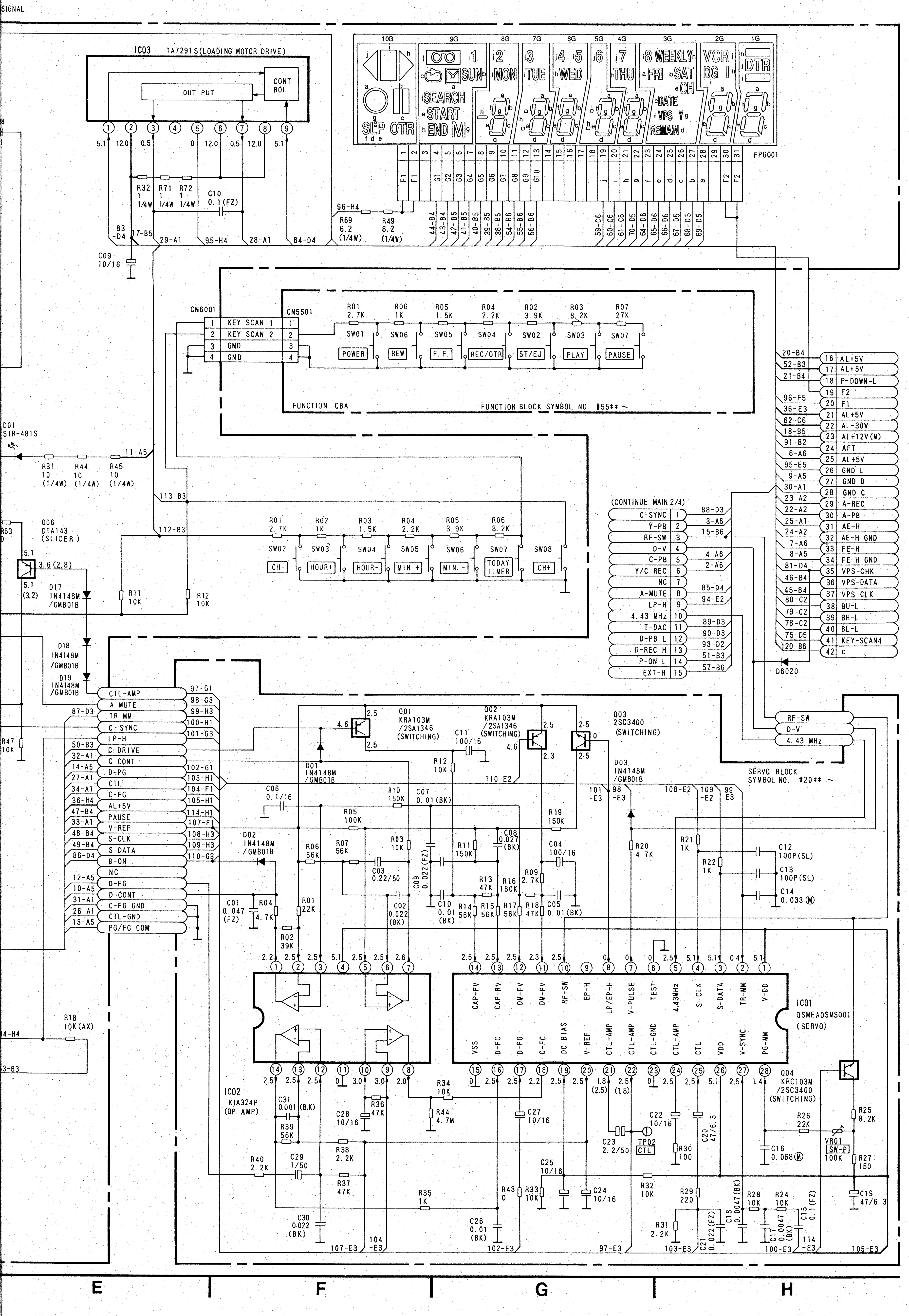
# MECHANICAL PARTS LIST

**PRODUCT SAFETY NOTE:** Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

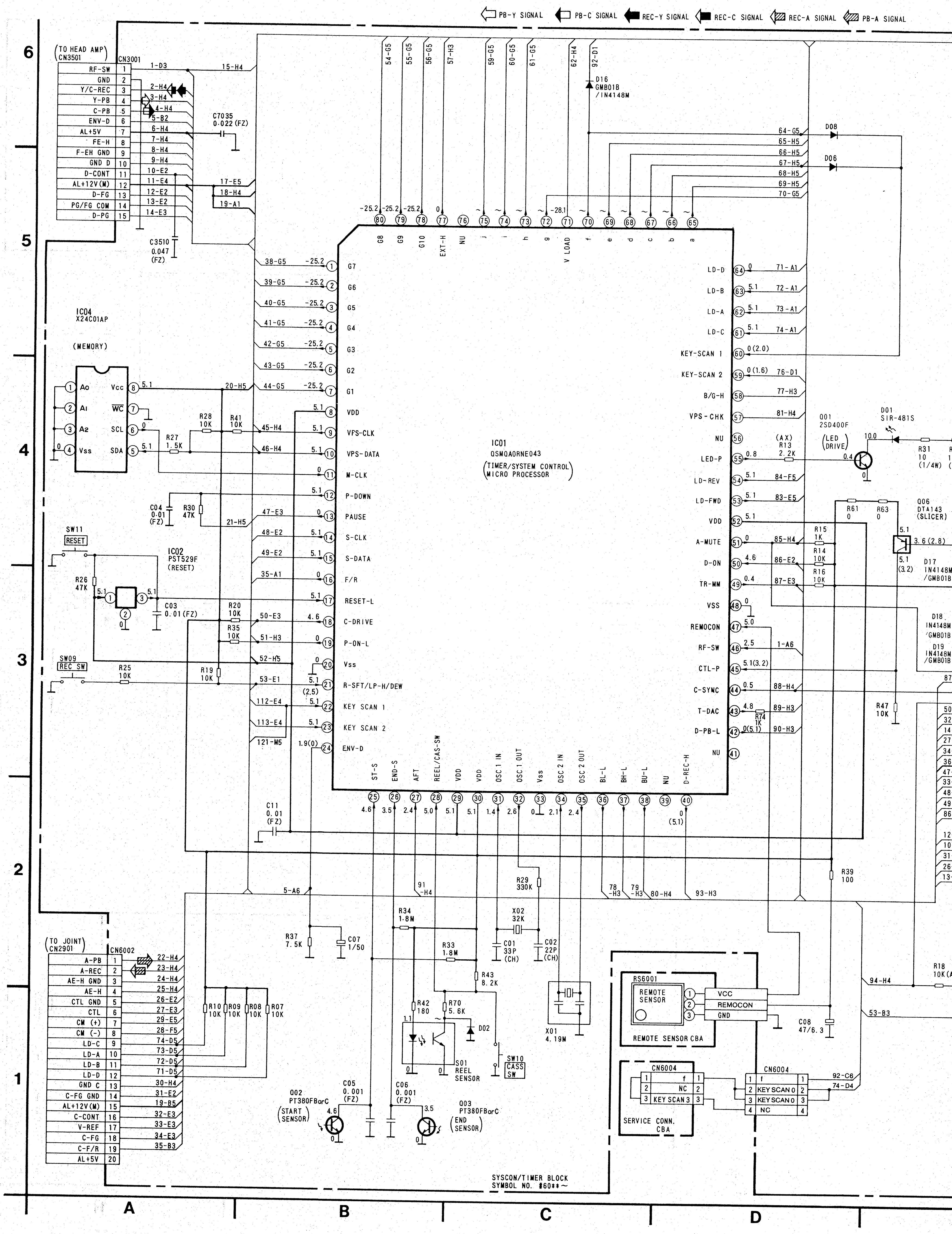
| Ref. No. | Description | Part No. |
|---|---|---|
| A1X | FRONT ASSEMBLY (8A-007 only) | 0VM201427 |
| A1X | FRONT ASSEMBLY (8A-027 only) | 0VM201429 |
| A1X | FRONT ASSEMBLY (9A-027S only) | 0VM201431 |
| A 2 | DOOR, CASSETTE | 0VM405136 |
| A 3 | SPRING, DOOR | 0VM403265 |
| A 4 | FOOT | 0VM403657 |
| A 15 | CASE, TOP (8A-007/8A-027 only) | 0VM201355 |
| A 15 | CASE, TOP (9A-027S only) | 0VM201372 |
| A 16 | PANEL, BOTTOM (FTZRESET) (8A-007/8A-027 only) | 0VM201357 |
| A 16 | PANEL, BOTTOM (9A-027S only) | 0VM201319 |
| A 17 | JACK BOARD (9A-027S only) | 0VM201316 |
| A 18 ⚠ | LABEL, RATING (8A-007 only) | 0VM405169 |
| A 18 ⚠ | LABEL, RATING (8A-027 only) | 0VM405187 |
| A 18 ⚠ | LABEL, RATING (9A-027S only) | 0VM405243 |
| B 1 | DECK ASSEMBLY (8A-007/8A-027 only) | N2102XN |
| 2B 1 | VIDEO TRAY | 0VM000047 |
| 2B 7 | HOLDER, DECK | 0VM301883 |
| 2B 13 | DECK SUPPORTER | 0VM404958 |
| 2L 021 | SCREW, P-TIGHT, WASHER HEAD M3X10 | GCMP3100 |
| 2L 031 | SCREW,RAMI-TIGHT BIND HEAD 3X10 + (9A-027S only) | DZM23100 |
| 2L 031 | P TITE SCREW, BIND + 3X10 (8A-007/8A-027 only) | GBMP3100 |
| 2L 061 | SCREW, P-TIGHT BIND HEAD 4X12 + | GBKP4120 |
| 2L 091 | A TIGHT SCREW 3X8 | DBK13080 |
| | **ACCESSORY KITS** | |
| X 1 | REMOCON BOX RRS2000-4703CR | UREMT36SR013 |
| X 2 ⚠ | OWNER'S MANUAL (8A-007 only) | 0VMN01337 |
| X 2 ⚠ | OWNER'S MANUAL (8A-027 only) | 0VMN01343 |
| X 2 ⚠ | OWNER'S MANUAL (9A-027S only) | 0VMN01353 |
| X 3 | RF CORD PAL 1.2M | WPZ0122LG001 |
| | DRY BATTERY or | 1790849 |
| | DRY BATTERY | 579W099 |

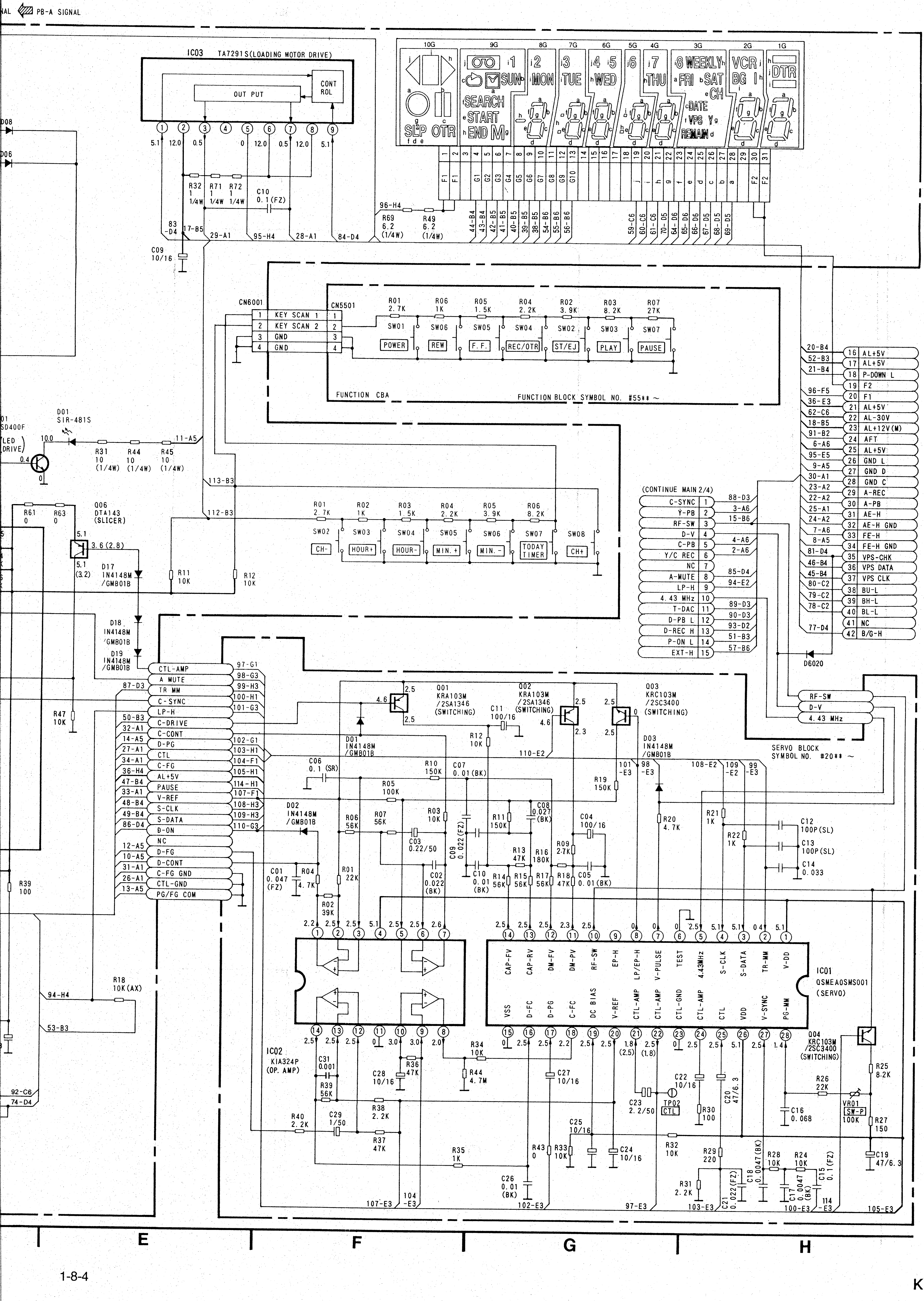
## Main 1/4 Schematic Diagram (8A-007/8A-027)


PB-Y SIGNAL
PB-C SIGNAL
REC-Y SIGNAL
REC-C SIGNAL
REC-A SIGNAL
PB-A SIGNAL
(TO HEAD AMP CN3501)
CN3001
RF-SW 1
GND 2
Y/C-REC 3
Y-PB 4
C-PB 5
ENV-D 6
AL+5V 7
FE-H 8
F-EH GND 9
GND D 10
D-CONT 11
AL+12V(M) 12
D-FG 13
PG/FG COM 14
D-PG 15
C7035 0.022 (FZ)
C3510 0.047 (FZ)
IC04 X24C01AP (MEMORY)
NC
Vcc
SCL
Vss
SDA
R28 10K
R41 10K
R27 1.5K
C04 0.01 (FZ)
R30 47K (AX)
SW11 RESET
IC02 PST529F (RESET)
R26 47K
C03 0.01(FZ)
R20 10K
R35 10K
SW09 REC SW
R25 10K
R19 10K
IC01 QSMQA0RNE043 (TIMER/SYSTEM CONTROL MICRO PROCESSOR)
G7
G6
G5
G4
G3
G2
G1
VDD
VPS-CLK
VPS-DATA
M-CLK
P-DOWN
PAUSE
S-CLK
S-DATA
F/R
RESET-L
C-DRIVE
P-ON-L
Vss
R-SFT/LP-H
KEY SCAN 1
KEY SCAN 2
ENV-D
ST-S
END-S
AFT
REEL/CAS-SW
VDD
OSC 1 IN
OSC 1 OUT
Vss
OSC 2 IN
OSC 2 OUT
BL-L
BH-L
BU-L
NU
D-REC-H
LD-D
LD-B
LD-A
LD-C
KEY-SCAN 1
KEY-SCAN 0
NU
VPS-CHK
NU
LED-P
LD-REV
LD-FWD
VDD
A-MUTE
D-ON
TR-MM
VSS
REMOCON
RF-SW
CTL-P
C-SYNC
T-DAC
D-PB-L
NU
G8
G9
G10
EXT-H
NU
j
i
h
g
V LOAD
f
e
d
c
b
a
D16 GMB01B /1N4148M
D08 1N4148M /GMB01B
Q01 2SD400F (LED DRIVE)
R13 2.2K (AX)
D01 SIR-481S
R31 10 (1/4W)
R44 10
Q06 DTA143 (SLICER)
R61 0
R63 0
R15 1K
R14 10K
R16 10K
R74 1K
D17 1N4148M /GMB01B
D18 1N4148M /GMB01B
D19 1N4148M /GMB01B
R47 10K
R39 100
R18 10K(AX)
C11 0.01 (FZ)
R29 330K
X02 32K
C01 33P (CH)
C02 22P (CH)
X01 4.19M
R34 1.8M
R33 1.8M
R43 8.2K
R42 180
R70 5.6K
D02 1N4148M /GMB01B
S01 REEL SENSOR
SW10 CASS SW
R37 7.5K
C07 1/50
C05 0.001 (FZ)
C06 0.001 (FZ)
Q02 PT380FBorC (START SENSOR)
Q03 PT380FBorC (END SENSOR)
RS6001 REMOTE SENSOR
VCC
REMOCON
GND
REMOTE SENSOR CBA
C08 47/6.3
CN6004
KEY SCAN 0
KEY SCAN 3
NC
SERVICE CONN. CBA
(TO JOINT CN2901)
CN6002
A-PB 1
A-REC 2
AE-H GND 3
AE-H 4
CTL GND 5
CTL 6
CM (+) 7
CM (-) 8
LD-C 9
LD-A 10
LD-B 11
LD-D 12
GND C 13
C-FG GND 14
AL+12V(M) 15
C-CONT 16
V-REF 17
C-FG 18
C-F/R 19
AL+5V 20
R10 10K
R09 10K
R08 10K
R07 10K
SYSCON/TIMER BLOCK SYMBOL NO. #60**~
A
B
C
D
1
2
3
4
5
6

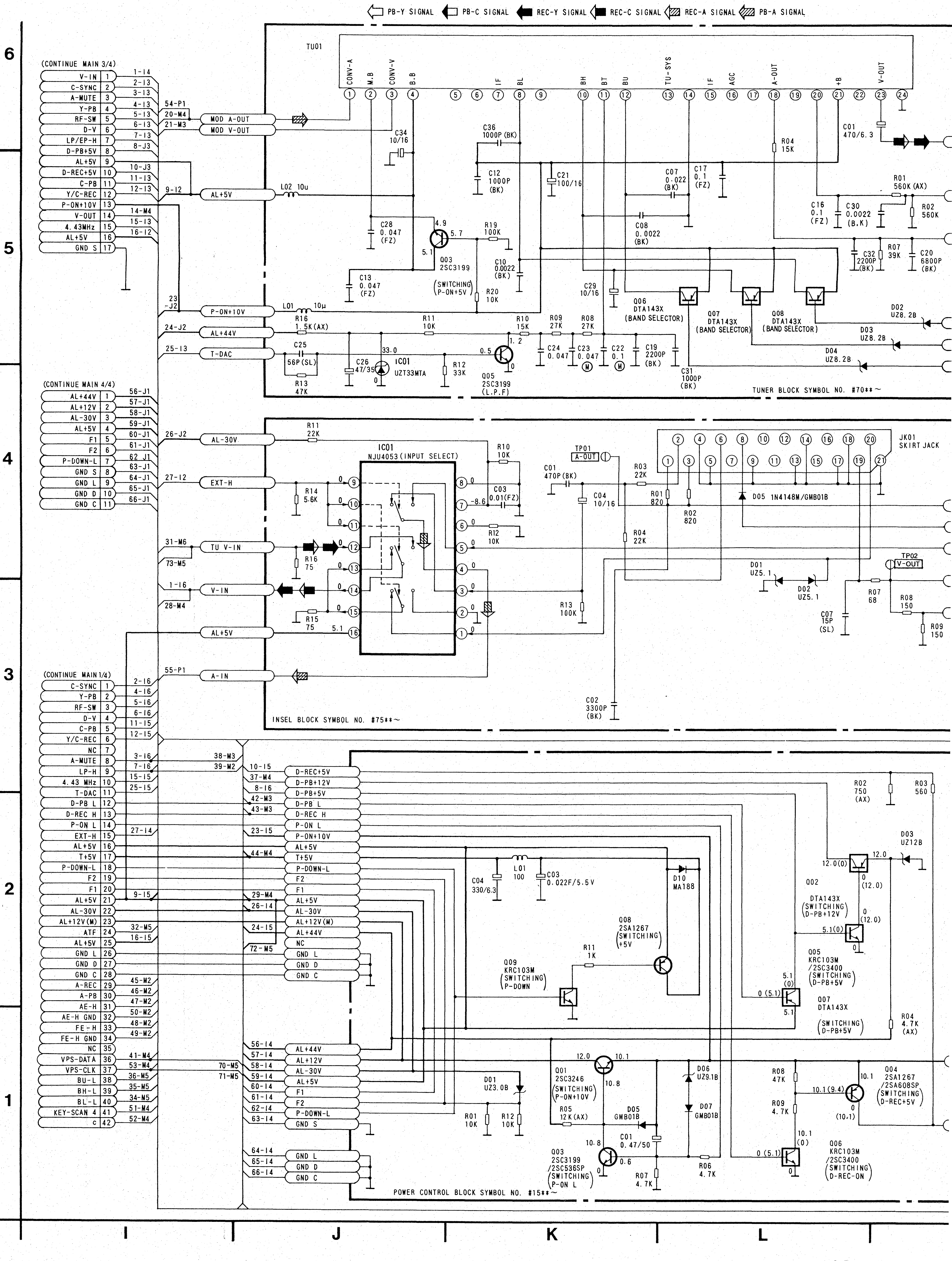

SIGNAL
IC03 TA7291S(LOADING MOTOR DRIVE)
CONT ROL
OUT PUT
FP6001
10G 9G 8G 7G 6G 5G 4G 3G 2G 1G
SUN MON TUE WED THU FRI SAT
SEARCH START END
SLP OTR
WEEKLY CH DATE VPS REMAIN
VCR BG DTR
CN6001
CN5501
KEY SCAN 1
KEY SCAN 2
GND
POWER REW F.F. REC/OTR ST/EJ PLAY PAUSE
FUNCTION CBA
FUNCTION BLOCK SYMBOL NO. #55** ~
CH- HOUR+ HOUR- MIN.+ MIN.- TODAY TIMER CH+
Q06 DTA143 (SLICER)
D17 1N4148M /GMB01B
D18 1N4148M /GMB01B
D19 1N4148M /GMB01B
(CONTINUE MAIN 2/4)
C-SYNC Y-PB RF-SW D-V C-PB Y/C REC NC A-MUTE LP-H 4.43 MHz T-DAC D-PB L D-REC H P-ON L EXT-H
AL+5V AL+5V P-DOWN-L F2 F1 AL+5V AL-30V AL+12V(M) AFT AL+5V GND L GND D GND C A-REC A-PB AE-H AE-H GND FE-H FE-H GND VPS-CHK VPS-DATA VPS-CLK BU-L BH-L BL-L KEY-SCAN4 c
D6020
CTL-AMP A MUTE TR MM C-SYNC LP-H C-DRIVE C-CONT D-PG CTL C-FG AL+5V PAUSE V-REF S-CLK S-DATA D-ON NC D-FG D-CONT C-FG GND CTL-GND PG/FG COM
Q01 KRA103M /2SA1346 (SWITCHING)
Q02 KRA103M /2SA1346 (SWITCHING)
Q03 2SC3400 (SWITCHING)
D01 1N4148M /GMB01B
D02 1N4148M /GMB01B
D03 1N4148M /GMB01B
RF-SW D-V 4.43 MHz
SERVO BLOCK SYMBOL NO. #20** ~
IC01 QSMEA0SMS001 (SERVO)
CAP-FV CAP-RV DM-FV DM-PV RF-SW EP-H LP/EP-H V-PULSE TEST 4.43MHz S-CLK S-DATA TR-MM V-DD
VSS D-FC D-PG C-FC DC BIAS V-REF CTL-AMP CTL-AMP CTL-GND CTL-AMP CTL VDD V-SYNC PG-MM
IC02 KIA324P (OP. AMP)
Q04 KRC103M /2SC3400 (SWITCHING)
VR01 SW-P 100K
TP02 CTL
E F G H

# Main 1/4 Schematic Diagram (9A-027S)

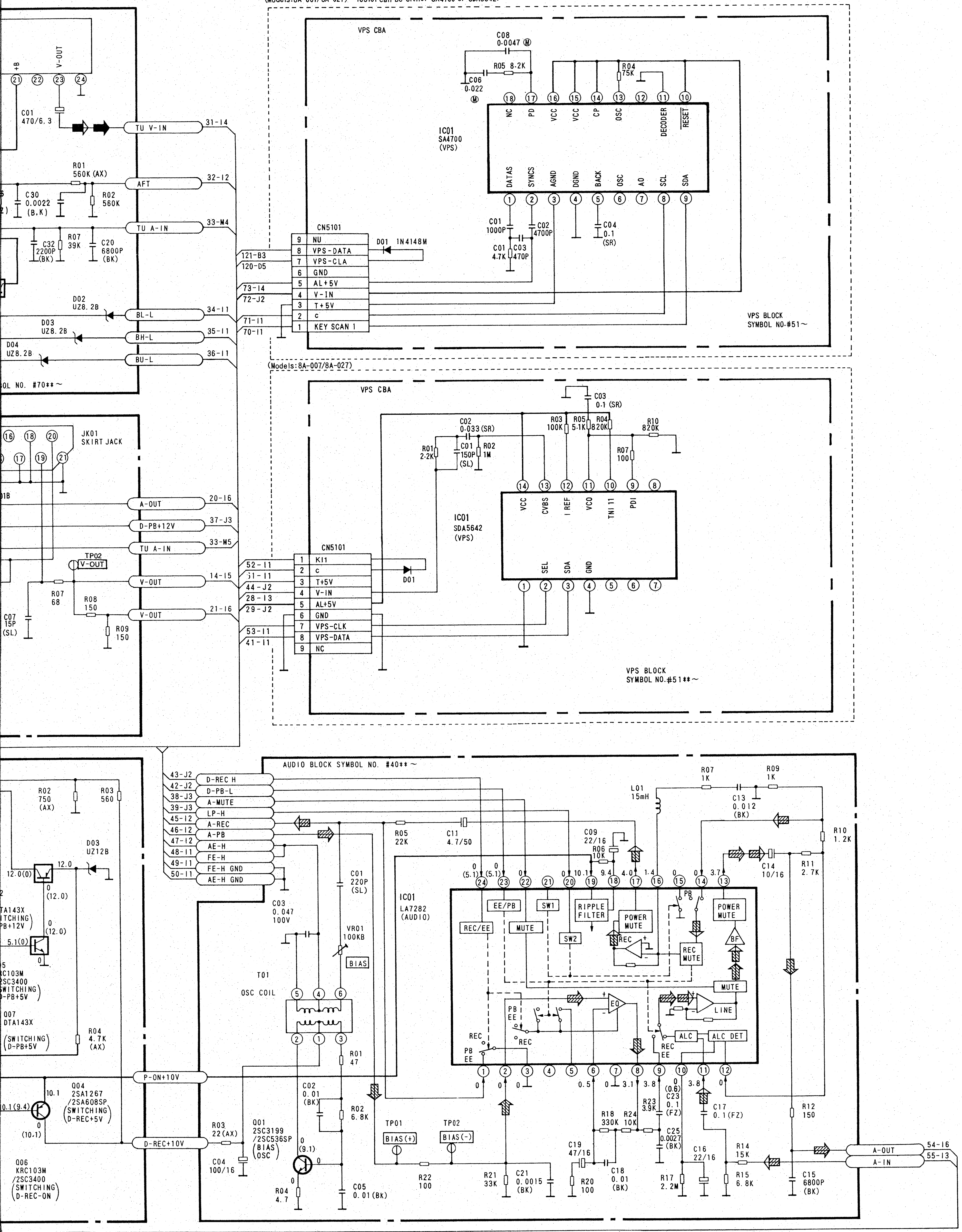

PB-Y SIGNAL
PB-C SIGNAL
REC-Y SIGNAL
REC-C SIGNAL
REC-A SIGNAL
PB-A SIGNAL
(TO HEAD AMP) CN3501
CN3001
RF-SW
GND
Y/C-REC
Y-PB
C-PB
ENV-D
AL+5V
FE-H
F-EH GND
GND D
D-CONT
AL+12V(M)
D-FG
PG/FG COM
D-PG
C7035 0.022 (FZ)
C3510 0.047 (FZ)
IC04 X24C01AP
(MEMORY)
Ao
A1
A2
Vss
Vcc
WC
SCL
SDA
R28 10K
R41 10K
R27 1.5K
C04 0.01 (FZ)
R30 47K
SW11 RESET
IC02 PST529F (RESET)
R26 47K
C03 0.01 (FZ)
R20 10K
R35 10K
SW09 REC SW
R25 10K
R19 10K
IC01
QSMQAORNE043
(TIMER/SYSTEM CONTROL MICRO PROCESSOR)
G7
G6
G5
G4
G3
G2
G1
VDD
VFS-CLK
VPS-DATA
M-CLK
P-DOWN
PAUSE
S-CLK
S-DATA
F/R
RESET-L
C-DRIVE
P-ON-L
Vss
R-SFT/LP-H/DEW
KEY SCAN 1
KEY SCAN 2
ENV-D
G8
G9
G10
EXT-H
NU
V LOAD
LD-D
LD-B
LD-A
LD-C
KEY-SCAN 1
KEY-SCAN 2
B/G-H
VPS-CHK
NU
LED-P
LD-REV
LD-FWD
VDD
A-MUTE
D-ON
TR-MM
VSS
REMOCON
RF-SW
CTL-P
C-SYNC
T-DAC
D-PB-L
NU
ST-S
END-S
AFT
REEL/CAS-SW
VDD
VDD
OSC 1 IN
OSC 1 OUT
Vss
OSC 2 IN
OSC 2 OUT
BL-L
BH-L
BU-L
NU
D-REC-H
D16 GMB01B /1N4148M
D08
D06
Q01 2SD400F
(LED DRIVE)
(AX) R13 2.2K
D01 SIR-481S
R31 10 (1/4W)
R61 0
R63 0
Q06 DT4143 (SLICER)
R15 1K
R14 10K
R16 10K
D17 1N4148M /GMB01B
D18 1N4148M /GMB01B
D19 1N4148M /GMB01B
R47 10K
R74 1K
R39 100
R18 10K
C11 0.01 (FZ)
R29 330K
R34 1.8M
X02 32K
C01 33P (CH)
C02 22P (CH)
R33 1.8M
R43 8.2K
R37 7.5K
C07 1/50
R42 180
R70 5.6K
D02
S01 REEL SENSOR
SW10 CASS SW
X01 4.19M
C05 0.001 (FZ)
C06 0.001 (FZ)
Q02 PT380FBorC (START SENSOR)
Q03 PT380FBorC (END SENSOR)
(TO JOINT) CN2901
CN6002
A-PB
A-REC
AE-H GND
AE-H
CTL GND
CTL
CM (+)
CM (-)
LD-C
LD-A
LD-B
LD-D
GND C
C-FG GND
AL+12V(M)
C-CONT
V-REF
C-FG
C-F/R
AL+5V
R10 10K
R09 10K
R08 10K
R07 10K
RS6001
REMOTE SENSOR
VCC
REMOCON
GND
REMOTE SENSOR CBA
C08 47/6.3
CN6004
f
NC
KEY SCAN 3
SERVICE CONN. CBA
KEY SCAN 0
NC
SYSCON/TIMER BLOCK SYMBOL NO. #60**~
A
B
C
D
1
2
3
4
5
6


PB-A SIGNAL
IC03 TA7291S(LOADING MOTOR DRIVE)
OUT PUT
CONT ROL
5.1 12.0 0.5 0 12.0 0.5 12.0 5.1
R32 1 1/4W
R71 1 1/4W
R72 1 1/4W
C10 0.1(FZ)
83-D4
17-B5
29-A1
95-H4
28-A1
84-D4
C09 10/16
D08
D06
10G 9G 8G 7G 6G 5G 4G 3G 2G 1G
SUN MON TUE WED THU FRI SAT
WEEKLY
VCR
DTR
SEARCH
START
END
SLP OTR
DATE
VPS
REMAIN
CH
BG
F1 F1 G1 G2 G3 G4 G5 G6 G7 G8 G9 G10
F2 F2
96-H4
R69 6.2 (1/4W)
R49 6.2 (1/4W)
44-B4 43-B4 42-B5 41-B5 40-B5 39-B5 38-B5 54-B6 55-B6 56-B6
59-C6 60-C6 61-C6 70-D5 64-D6 65-D6 66-D6 67-D5 68-D5 69-D5
CN6001
CN5501
KEY SCAN 1
KEY SCAN 2
GND
GND
R01 2.7K
R06 1K
R05 1.5K
R04 2.2K
R02 3.9K
R03 8.2K
R07 27K
SW01 POWER
SW06 REW
SW05 F.F.
SW04 REC/OTR
SW02 ST/EJ
SW03 PLAY
SW07 PAUSE
FUNCTION CBA
FUNCTION BLOCK SYMBOL NO. #55** ~
D01 SIR-481S
SD400F
(LED DRIVE)
10.0
0.4
R31 10 (1/4W)
R44 10 (1/4W)
R45 10 (1/4W)
11-A5
113-B3
112-B3
R01 2.7K
R02 1K
R03 1.5K
R04 2.2K
R05 3.9K
R06 8.2K
SW02 CH-
SW03 HOUR+
SW04 HOUR-
SW05 MIN.+
SW06 MIN.-
SW07 TODAY TIMER
SW08 CH+
R11 10K
R12 10K
R61 0
R63 0
Q06 DTA143 (SLICER)
5.1
3.6(2.8)
5.1 (3.2)
D17 1N4148M /GMB01B
D18 1N4148M /GMB01B
D19 1N4148M /GMB01B
R47 10K
R39 100
R18 10K(AX)
94-H4
53-B3
92-C6
74-D4
(CONTINUE MAIN 2/4)
C-SYNC 1 88-D3
Y-PB 2 3-A6
RF-SW 3 15-B6
D-V 4 4-A6
C-PB 5 2-A6
Y/C REC 6
NC 7
A-MUTE 8 85-D4
LP-H 9 94-E2
4.43 MHz 10 89-D3
T-DAC 11 90-D3
D-PB L 12 93-D2
D-REC H 13 51-B3
P-ON L 14 57-B6
EXT-H 15
20-B4 16 AL+5V
52-B3 17 AL+5V
21-B4 18 P-DOWN L
19 F2
96-F5 20 F1
36-E3 21 AL+5V
62-C6 22 AL-30V
18-B5 23 AL+12V(M)
91-B2 24 AFT
6-A6 25 AL+5V
95-E5 26 GND L
9-A5 27 GND D
30-A1 28 GND C
23-A2 29 A-REC
22-A2 30 A-PB
25-A1 31 AE-H
24-A2 32 AE-H GND
7-A6 33 FE-H
8-A5 34 FE-H GND
81-D4 35 VPS-CHK
46-B4 36 VPS DATA
45-B4 37 VPS CLK
80-C2 38 BU-L
79-C2 39 BH-L
78-C2 40 BL-L
77-D4 41 NC
42 B/G-H
D6020
RF-SW
D-V
4.43 MHz
SERVO BLOCK SYMBOL NO. #20** ~
CTL-AMP 97-G1
A MUTE 98-G3
TR MM 99-H3
C-SYNC 100-H1
LP-H 101-G3
C-DRIVE
C-CONT 102-G1
D-PG 103-H1
CTL 104-F1
C-FG 105-H1
AL+5V
PAUSE 114-H1
V-REF 107-F1
S-CLK 108-H3
S-DATA 109-H3
D-ON 110-G3
NC
D-FG
D-CONT
C-FG GND
CTL-GND
PG/FG COM
87-D3
50-B3 32-A1 14-A5 27-A1 34-A1 36-H4 47-B4 33-A1 48-B4 49-B4 86-D4
12-A5 10-A5 31-A1 26-A1 13-A5
Q01 KRA103M /2SA1346 (SWITCHING)
Q02 KRA103M /2SA1346 (SWITCHING)
Q03 KRC103M /2SC3400 (SWITCHING)
4.6 2.5 2.5 4.6 2.5 2.3 2.5 0
C11 100/16
R12 10K
D01 1N4148M /GMB01B
110-E2
D03 1N4148M /GMB01B
101-E3
98-E3
108-E2
109-E2
99-E3
C06 0.1 (SR)
R10 150K
C07 0.01(BK)
R05 100K
R19 150K
D02 1N4148M /GMB01B
R06 56K
R07 56K
R03 10K
C08 0.027 (BK)
C04 100/16
R20 4.7K
R21 1K
R22 1K
C12 100P(SL)
C13 100P(SL)
C14 0.033
C03 0.22/50
C09 0.022(FZ)
R11 150K
R13 47K
R16 180K
R09 2.7K
C01 0.047 (FZ)
R04 4.7K
R01 22K
C02 0.022 (BK)
C10 0.01 (BK)
R14 56K
R15 56K
R17 56K
R18 47K
C05 0.01(BK)
R02 39K
2.2 2.5 2.5 5.1 2.5 2.5 2.6
2.5 2.5 2.5 2.3 2.5 0 0 0 2.5 5.1 5.1 0 5.1
CAP-FV CAP-RV DM-FV DM-PV RF-SW EP-H LP/EP-H V-PULSE TEST 4.43MHz S-CLK S-DATA TR-MM V-DD
VSS D-FC D-PG C-FC DC BIAS V-REF CTL-AMP CTL-AMP CTL-GND CTL-AMP CTL VDD V-SYNC PG-MM
IC01 QSMEA0SMS001 (SERVO)
IC02 KIA324P (OP. AMP)
2.5 2.5 0 3.0 3.0 2.0
0 2.5 2.5 2.2 2.5 2.5 1.8 (2.5) 2.5 (1.8) 0 2.5 2.5 5.1 2.5 1.4
Q04 KRC103M /2SC3400 (SWITCHING)
C31 0.001
R36 47K
C28 10/16
R34 10K
R44 4.7M
C27 10/16
R39 56K
R38 2.2K
R40 2.2K
C29 1/50
R37 47K
R35 1K
C22 10/16
C23 2.2/50
TP02 CTL
R30 100
C20 47/6.3
C16 0.068
R26 22K
VR01 SW-P 100K
R25 8.2K
R27 150
C25 10/16
R43 0
R33 10K
C24 10/16
R32 10K
R29 220
R28 10K
R24 10K
C19 47/6.3
C26 0.01 (BK)
R31 2.2K
C21 0.022(FZ)
C18 0.0047(BK)
C17 0.0047 (BK)
C15 0.1 (FZ)
107-E3
104-E3
102-E3
97-E3
103-E3
100-E3
114-E3
105-E3
E
F
G
H

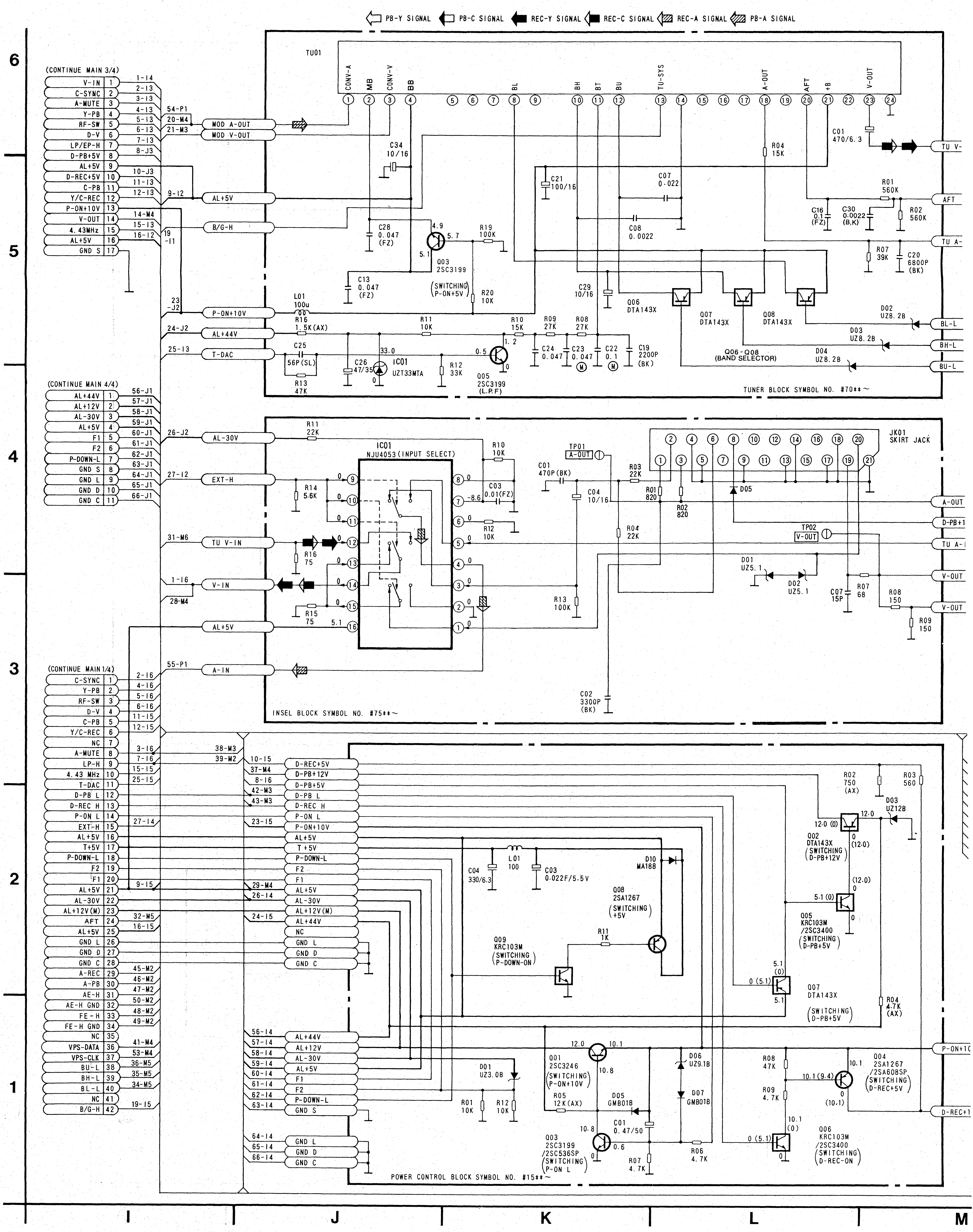
# Main 2/4 Schematic Diagram (8A-007/8A-027)


PB-Y SIGNAL
PB-C SIGNAL
REC-Y SIGNAL
REC-C SIGNAL
REC-A SIGNAL
PB-A SIGNAL
(CONTINUE MAIN 3/4)
V-IN
C-SYNC
A-MUTE
Y-PB
RF-SW
D-V
LP/EP-H
D-PB+5V
AL+5V
D-REC+5V
C-PB
Y/C-REC
P-ON+10V
V-OUT
4.43MHz
AL+5V
GND S
MOD A-OUT
MOD V-OUT
AL+5V
P-ON+10V
AL+44V
T-DAC
TU01
CONV-A
M.B
CONV-V
B.B
IF
BL
BH
BT
BU
TU-SYS
AGC
A-OUT
+B
V-OUT
Q03 2SC3199 (SWITCHING P-ON+5V)
Q05 2SC3199 (L.P.F)
IC01 UZT33MTA
Q06 DTA143X (BAND SELECTOR)
Q07 DTA143X (BAND SELECTOR)
Q08 DTA143X (BAND SELECTOR)
D02 UZ8.2B
D03 UZ8.2B
D04 UZ8.2B
TUNER BLOCK SYMBOL NO. #70**~
(CONTINUE MAIN 4/4)
AL+44V
AL+12V
AL-30V
AL+5V
F1
F2
P-DOWN-L
GND S
GND L
GND D
GND C
AL-30V
EXT-H
TU V-IN
V-IN
AL+5V
A-IN
IC01 NJU4053 (INPUT SELECT)
TP01 A-OUT
JK01 SKIRT JACK
D05 1N4148M/GMB01B
TP02 V-OUT
D01 UZ5.1
D02 UZ5.1
INSEL BLOCK SYMBOL NO. #75**~
(CONTINUE MAIN 1/4)
C-SYNC
Y-PB
RF-SW
D-V
C-PB
Y/C-REC
NC
A-MUTE
LP-H
4.43 MHz
T-DAC
D-PB L
D-REC H
P-ON L
EXT-H
AL+5V
T+5V
P-DOWN-L
F2
F1
AL+5V
AL-30V
AL+12V(M)
ATF
AL+5V
GND L
GND D
GND C
A-REC
A-PB
AE-H
AE-H GND
FE-H
FE-H GND
NC
VPS-DATA
VPS-CLK
BU-L
BH-L
BL-L
KEY-SCAN 4
c
D-REC+5V
D-PB+12V
D-PB+5V
D-PB L
D-REC H
P-ON L
P-ON+10V
AL+5V
T+5V
P-DOWN-L
F2
F1
AL+5V
AL-30V
AL+12V(M)
AL+44V
NC
GND L
GND D
GND C
AL+44V
AL+12V
AL-30V
AL+5V
F1
F2
P-DOWN-L
GND S
GND L
GND D
GND C
D10 MA188
Q08 2SA1267 (SWITCHING +5V)
Q09 KRC103M (SWITCHING P-DOWN)
Q02 DTA143X (SWITCHING D-PB+12V)
Q05 KRC103M /2SC3400 (SWITCHING D-PB+5V)
Q07 DTA143X (SWITCHING D-PB+5V)
D03 UZ12B
Q01 2SC3246 (SWITCHING P-ON+10V)
D01 UZ3.0B
D05 GMB01B
D06 UZ9.1B
D07 GMB01B
Q03 2SC3199 /2SC536SP (SWITCHING P-ON L)
Q04 2SA1267 /2SA608SP (SWITCHING D-REC+5V)
Q06 KRC103M /2SC3400 (SWITCHING D-REC-ON)
POWER CONTROL BLOCK SYMBOL NO. #15**~
1
2
3
4
5
6
I
J
K
L

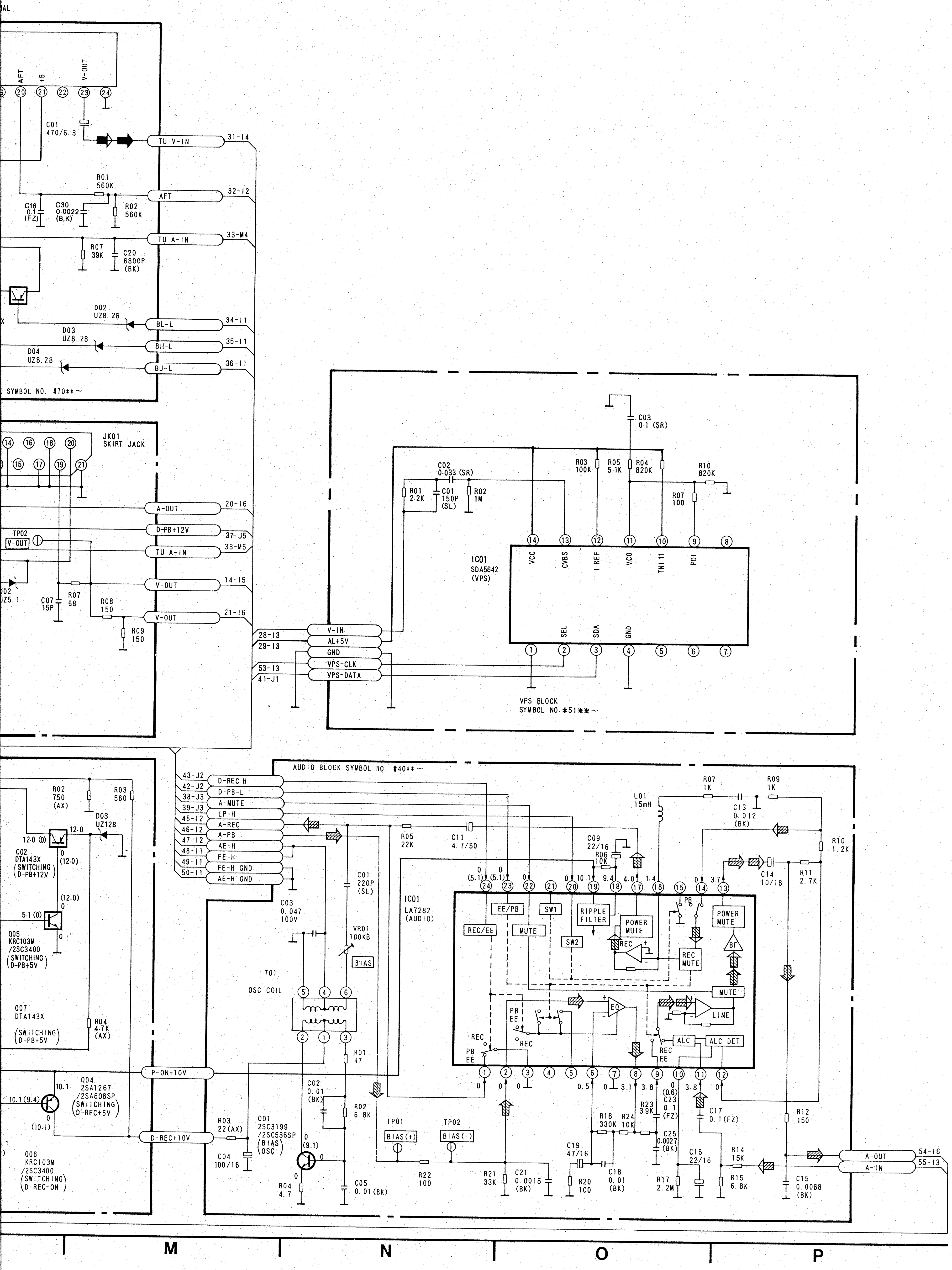
(Models:8A-007/8A-027) IC5101 can be either SA4700 or SDA5642.


VPS CBA
IC01
SA4700
(VPS)
C08 0.0047
R05 8.2K
C06 0.022
R04 75K
NC
PD
VCC
CP
OSC
DECODER
RESET
DATAS
SYNCS
AGND
DGND
BACK
AO
SCL
SDA
C01 1000P
C02 4700P
C01 4.7K
C03 470P
C04 0.1 (SR)
CN5101
NU
VPS-DATA
VPS-CLA
GND
AL+5V
V-IN
T+5V
c
KEY SCAN 1
D01 1N4148M
VPS BLOCK
SYMBOL NO.#51~
(Models:8A-007/8A-027)
IC01
SDA5642
(VPS)
C03 0.1 (SR)
C02 0.033(SR)
R01 2.2K
C01 150P (SL)
R02 1M
R03 100K
R05 5.1K
R04 820K
R10 820K
R07 100
VCC
CVBS
I REF
VCO
TNI11
PDI
SEL
SDA
GND
KI1
T+5V
V-IN
AL+5V
VPS-CLK
VPS-DATA
NC
D01
VPS BLOCK
SYMBOL NO.#51**~
+B
V-OUT
C01 470/6.3
TU V-IN
R01 560K (AX)
AFT
C30 0.0022 (B,K)
R02 560K
TU A-IN
C32 2200P (BK)
R07 39K
C20 6800P (BK)
D02 UZ8.2B
BL-L
D03 UZ8.2B
BH-L
D04 UZ8.2B
BU-L
OL NO. #70**~
JK01
SKIRT JACK
A-OUT
D-PB+12V
TU A-IN
TP02
V-OUT
R07 68
R08 150
V-OUT
C07 15P (SL)
R09 150
31-14
32-12
33-M4
121-B3
120-D5
73-14
72-J2
34-11
71-11
70-11
35-11
36-11
20-16
37-J3
33-M5
52-11
51-11
44-J2
28-13
29-J2
14-15
21-16
53-11
41-11
AUDIO BLOCK SYMBOL NO. #40**~
43-J2
42-J2
38-J3
39-J3
45-12
46-12
47-12
48-11
49-11
50-11
D-REC H
D-PB-L
A-MUTE
LP-H
A-REC
A-PB
AE-H
FE-H
FE-H GND
AE-H GND
R02 750 (AX)
R03 560
D03 UZ12B
TA143X
(SWITCHING)
PB+12V
RC103M
2SC3400
(SWITCHING)
D-PB+5V
Q07 DTA143X
(SWITCHING)
(D-PB+5V)
R04 4.7K (AX)
Q04
2SA1267
/2SA608SP
(SWITCHING)
(D-REC+5V)
Q06
KRC103M
/2SC3400
(SWITCHING)
(D-REC-ON)
P-ON+10V
D-REC+10V
R03 22(AX)
C04 100/16
C03 0.047 100V
C01 220P (SL)
VR01 100KB
BIAS
T01
OSC COIL
R01 47
C02 0.01 (BK)
R02 6.8K
Q01
2SC3199
/2SC536SP
(BIAS)
(OSC)
R04 4.7
C05 0.01(BK)
R05 22K
C11 4.7/50
TP01
BIAS(+)
TP02
BIAS(-)
R22 100
R21 33K
C21 0.0015 (BK)
IC01
LA7282
(AUDIO)
REC/EE
EE/PB
SW1
MUTE
SW2
RIPPLE FILTER
POWER MUTE
REC
REC MUTE
POWER MUTE
BF
PB
EE
EQ
MUTE
LINE
ALC
ALC DET
L01 15mH
R07 1K
R09 1K
C13 0.012 (BK)
C09 22/16
R06 10K
R10 1.2K
C14 10/16
R11 2.7K
C19 47/16
C18 0.01 (BK)
R20 100
R18 330K
R24 10K
R23 3.9K
C23 0.1 (FZ)
C25 0.0027 (BK)
R17 2.2M
C16 22/16
C17 0.1(FZ)
R14 15K
R15 6.8K
R12 150
C15 6800P (BK)
A-OUT
A-IN
54-16
55-13
M
N
O
P

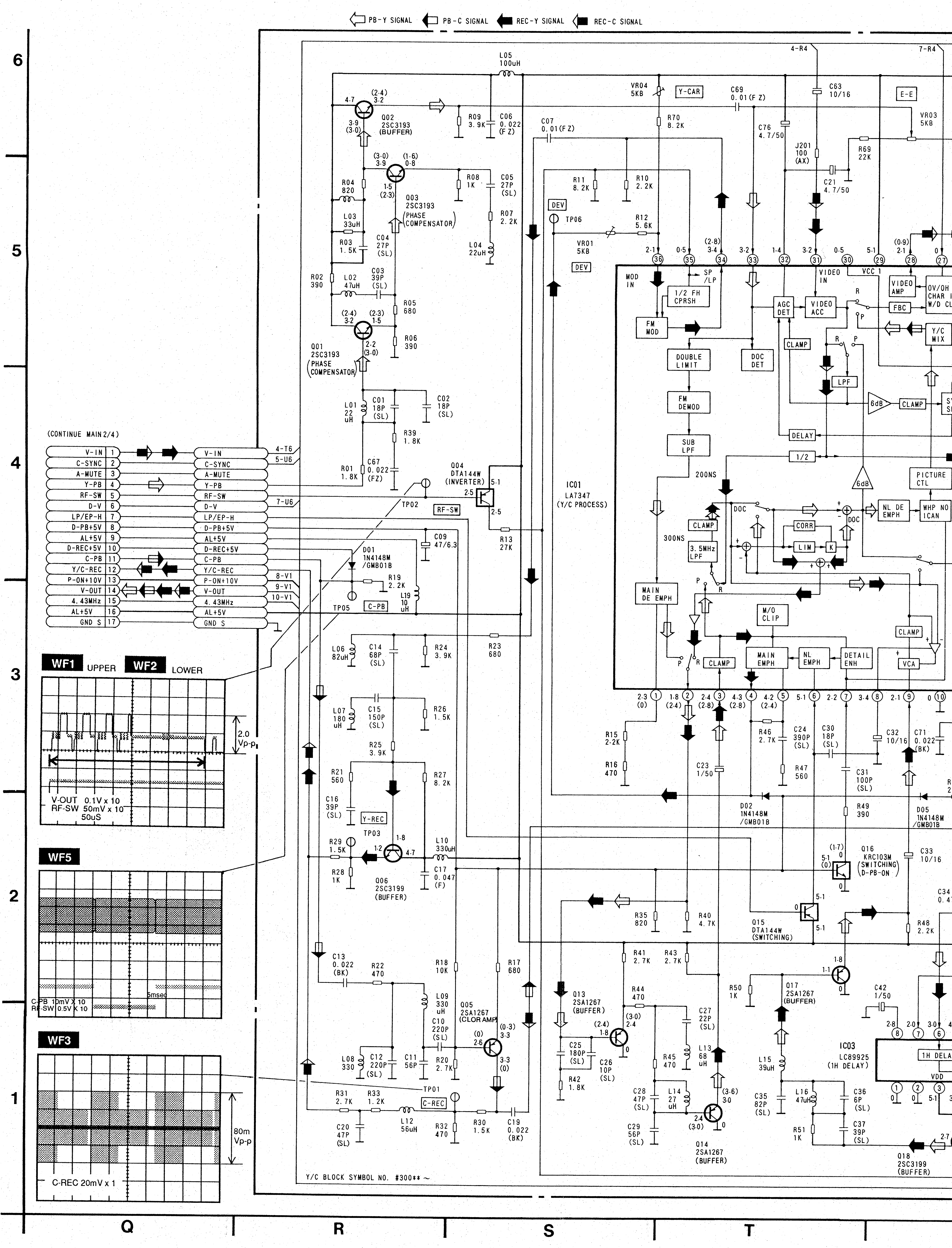
# Main 2/4 Schematic Diagram (9A-027S)

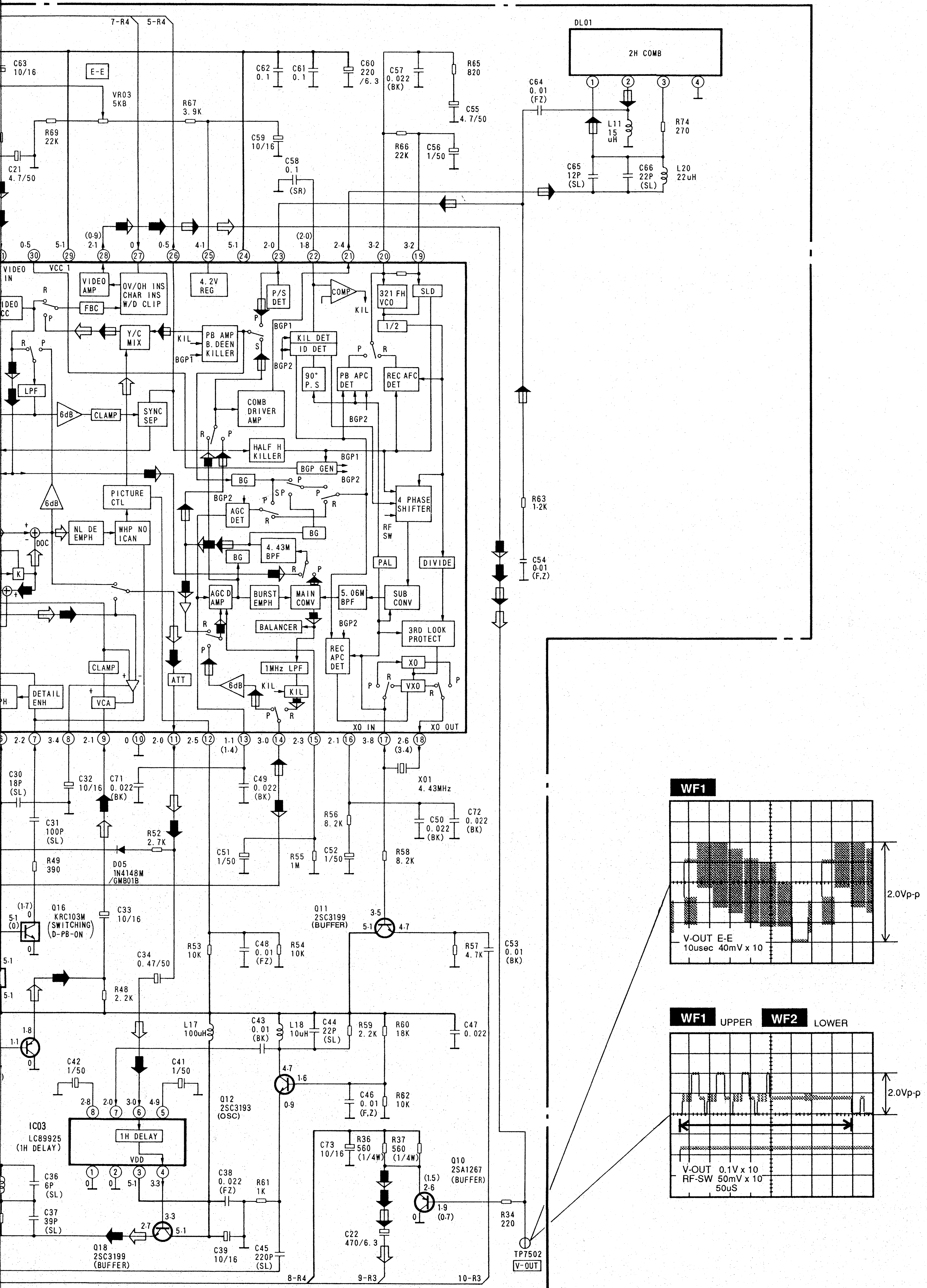


PB-Y SIGNAL
PB-C SIGNAL
REC-Y SIGNAL
REC-C SIGNAL
REC-A SIGNAL
PB-A SIGNAL
6
5
4
3
2
1
I
J
K
L
M
(CONTINUE MAIN 3/4)
V-IN
C-SYNC
A-MUTE
Y-PB
RF-SW
D-V
LP/EP-H
D-PB+5V
AL+5V
D-REC+5V
C-PB
Y/C-REC
P-ON+10V
V-OUT
4.43MHz
AL+5V
GND S
TU01
CONV-A
MB
CONV-V
BB
BL
BH
BT
BU
TU-SYS
A-OUT
AFT
+B
V-OUT
MOD A-OUT
MOD V-OUT
AL+5V
B/G-H
P-ON+10V
AL+44V
T-DAC
C34 10/16
C28 0.047 (FZ)
Q03 2SC3199 (SWITCHING P-ON+5V)
R19 100K
R20 10K
C13 0.047 (FZ)
L01 100u
R16 1.5K(AX)
R11 10K
C25 56P(SL)
C26 47/35
IC01 UZT33MTA
R12 33K
R13 47K
Q05 2SC3199 (L.P.F)
C21 100/16
C07 0.022
C08 0.0022
C29 10/16
Q06 DTA143X
Q07 DTA143X
Q08 DTA143X
Q06-Q08 (BAND SELECTOR)
R09 27K
R08 27K
R10 15K
C24 0.047
C23 0.047
C22 0.1
C19 2200P (BK)
R04 15K
C01 470/6.3
R01 560K
C16 0.1 (FZ)
C30 0.0022 (B,K)
R02 560K
R07 39K
C20 6800P (BK)
D02 UZ8.2B
D03 UZ8.2B
D04 UZ8.2B
TU V-
AFT
TU A-
BL-L
BH-L
BU-L
TUNER BLOCK SYMBOL NO. #70**~
(CONTINUE MAIN 4/4)
AL+44V
AL+12V
AL-30V
AL+5V
F1
F2
P-DOWN-L
GND S
GND L
GND D
GND C
AL-30V
EXT-H
TU V-IN
V-IN
AL+5V
A-IN
R11 22K
IC01 NJU4053(INPUT SELECT)
R14 5.6K
R16 75
R15 75
R10 10K
C03 0.01(FZ)
R12 10K
TP01 A-OUT
C01 470P(BK)
C04 10/16
R03 22K
R01 820
R02 820
R04 22K
R13 100K
D05
JK01 SKIRT JACK
TP02 V-OUT
D01 UZ5.1
D02 UZ5.1
C07 15P
R07 68
R08 150
R09 150
C02 3300P (BK)
A-OUT
D-PB+1
TU A-I
V-OUT
V-OUT
INSEL BLOCK SYMBOL NO. #75**~
(CONTINUE MAIN 1/4)
C-SYNC
Y-PB
RF-SW
D-V
C-PB
Y/C-REC
NC
A-MUTE
LP-H
4.43 MHz
T-DAC
D-PB L
D-REC H
P-ON L
EXT-H
AL+5V
T+5V
P-DOWN-L
F2
F1
AL+5V
AL-30V
AL+12V(M)
AFT
AL+5V
GND L
GND D
GND C
A-REC
A-PB
AE-H
AE-H GND
FE-H
FE-H GND
NC
VPS-DATA
VPS-CLK
BU-L
BH-L
BL-L
NC
B/G-H
D-REC+5V
D-PB+12V
D-PB+5V
D-PB L
D-REC H
P-ON L
P-ON+10V
AL+5V
T+5V
P-DOWN-L
F2
F1
AL+5V
AL-30V
AL+12V(M)
AL+44V
NC
GND L
GND D
GND C
AL+44V
AL+12V
AL-30V
AL+5V
F1
F2
P-DOWN-L
GND S
GND L
GND D
GND C
C04 330/6.3
L01 100
C03 0.022F/5.5V
D10 MA188
Q08 2SA1267 (SWITCHING +5V)
R11 1K
Q09 KRC103M (SWITCHING P-DOWN-ON)
R02 750 (AX)
R03 560
D03 UZ12B
Q02 DTA143X (SWITCHING D-PB+12V)
Q05 KRC103M /2SC3400 (SWITCHING D-PB+5V)
Q07 DTA143X (SWITCHING D-PB+5V)
R04 4.7K (AX)
D01 UZ3.0B
R01 10K
R12 10K
Q01 2SC3246 (SWITCHING P-ON+10V)
R05 12K(AX)
D05 GMB01B
D06 UZ9.1B
D07 GMB01B
C01 0.47/50
Q03 2SC3199 /2SC536SP (SWITCHING P-ON L)
R07 4.7K
R06 4.7K
R08 47K
R09 4.7K
Q04 2SA1267 /2SA608SP (SWITCHING D-REC+5V)
Q06 KRC103M /2SC3400 (SWITCHING D-REC-ON)
P-ON+1
D-REC+
POWER CONTROL BLOCK SYMBOL NO. #15**~


AFT
+B
V-OUT
⑳ ㉑ ㉒ ㉓ ㉔
C01 470/6.3
TU V-IN
31-14
R01 560K
AFT
32-12
C16 0.1 (FZ)
C30 0.0022 (B,K)
R02 560K
TU A-IN
33-M4
R07 39K
C20 6800P (BK)
D02 UZ8.2B
BL-L
34-11
D03 UZ8.2B
BH-L
35-11
D04 UZ8.2B
BU-L
36-11
SYMBOL NO. #70**~
JK01 SKIRT JACK
A-OUT
20-16
D-PB+12V
37-J5
TP02 V-OUT
TU A-IN
33-M5
V-OUT
14-15
D02 UZ5.1
C07 15P
R07 68
R08 150
V-OUT
21-16
R09 150
V-IN
AL+5V
GND
VPS-CLK
VPS-DATA
28-13
29-13
53-13
41-J1
C03 0.1 (SR)
C02 0.033 (SR)
R01 2.2K
C01 150P (SL)
R02 1M
R03 100K
R05 5.1K
R04 820K
R10 820K
R07 100
IC01 SDA5642 (VPS)
VCC
CVBS
I REF
VCO
TNI 11
PDI
SEL
SDA
GND
VPS BLOCK
SYMBOL NO. #51**~
AUDIO BLOCK SYMBOL NO. #40**~
43-J2 D-REC H
42-J2 D-PB-L
38-J3 A-MUTE
39-J3 LP-H
45-12 A-REC
46-12 A-PB
47-12 AE-H
48-11 FE-H
49-11 FE-H GND
50-11 AE-H GND
R02 750 (AX)
R03 560
D03 UZ12B
Q02 DTA143X (SWITCHING D-PB+12V)
Q05 KRC103M /2SC3400 (SWITCHING D-PB+5V)
Q07 DTA143X (SWITCHING D-PB+5V)
R04 4.7K (AX)
Q04 2SA1267 /2SA608SP (SWITCHING D-REC+5V)
Q06 KRC103M /2SC3400 (SWITCHING D-REC-ON)
P-ON+10V
D-REC+10V
R03 22 (AX)
C04 100/16
Q01 2SC3199 /2SC536SP (BIAS OSC)
R04 4.7
C03 0.047 100V
C01 220P (SL)
VR01 100KB
BIAS
T01 OSC COIL
R01 47
C02 0.01 (BK)
R02 6.8K
C05 0.01 (BK)
TP01 BIAS(+)
TP02 BIAS(-)
R22 100
R05 22K
C11 4.7/50
IC01 LA7282 (AUDIO)
L01 15mH
R07 1K
R09 1K
C13 0.012 (BK)
C09 22/16
R06 10K
R10 1.2K
C14 10/16
R11 2.7K
REC/EE
EE/PB
MUTE
SW1
SW2
RIPPLE FILTER
POWER MUTE
REC MUTE
BF
EQ
LINE
ALC
ALC DET
R21 33K
C21 0.0015 (BK)
C19 47/16
R20 100
C18 0.01 (BK)
R18 330K
R24 10K
R23 3.9K
C23 0.1 (FZ)
C25 0.0027 (BK)
R17 2.2M
C16 22/16
C17 0.1 (FZ)
R14 15K
R15 6.8K
R12 150
C15 0.0068 (BK)
A-OUT
A-IN
54-16
55-13
M
N
O
P

# Main 3/4 Schematic Diagram (8A-007/8A-027)


PB-Y SIGNAL
PB-C SIGNAL
REC-Y SIGNAL
REC-C SIGNAL
6
5
4
3
2
1
Q
R
S
T
(CONTINUE MAIN 2/4)
V-IN 1
C-SYNC 2
A-MUTE 3
Y-PB 4
RF-SW 5
D-V 6
LP/EP-H 7
D-PB+5V 8
AL+5V 9
D-REC+5V 10
C-PB 11
Y/C-REC 12
P-ON+10V 13
V-OUT 14
4.43MHz 15
AL+5V 16
GND S 17
4-T6
5-U6
7-U6
8-V1
9-V1
10-V1
WF1 UPPER
WF2 LOWER
2.0 Vp-p
V-OUT 0.1V x 10
RF-SW 50mV x 10
50uS
WF5
C-PB 10mV X 10
RF-SW 0.5V X 10
5msec
WF3
80m Vp-p
C-REC 20mV x 1
L05 100uH
Q02 2SC3193 (BUFFER)
Q03 2SC3193 (PHASE COMPENSATOR)
Q01 2SC3193 (PHASE COMPENSATOR)
Q04 DTA144W (INVERTER)
Q05 2SA1267 (CLOR AMP)
Q06 2SC3199 (BUFFER)
Q13 2SA1267 (BUFFER)
Q14 2SA1267 (BUFFER)
Q15 DTA144W (SWITCHING)
Q16 KRC103M (SWITCHING) (D-PB-ON)
Q17 2SA1267 (BUFFER)
Q18 2SC3199 (BUFFER)
D01 1N4148M /GMB01B
D02 1N4148M /GMB01B
D05 1N4148M /GMB01B
IC01 LA7347 (Y/C PROCESS)
IC03 LC89925 (1H DELAY)
1H DELA
VDD
TP01 C-REC
TP02 RF-SW
TP03 Y-REC
TP05 C-PB
TP06 DEV
VR01 5KB DEV
VR03 5KB
VR04 5KB Y-CAR
E-E
J201 100 (AX)
MOD IN
SP /LP
1/2 FH CPRSH
FM MOD
DOUBLE LIMIT
FM DEMOD
SUB LPF
200NS
300NS
DOC DET
AGC DET
VIDEO ACC
VIDEO IN
VCC 1
VIDEO AMP
OV/OH CHAR I W/D CL
FBC
Y/C MIX
CLAMP
LPF
6dB
DELAY
1/2
PICTURE CTL
NL DE EMPH
WHP NO ICAN
DOC
CORR
LIM
K
3.5MHz LPF
MAIN DE EMPH
M/O CLIP
MAIN EMPH
NL EMPH
DETAIL ENH
VCA
R02 390
R03 1.5K
R04 820
R05 680
R06 390
R07 2.2K
R08 1K
R09 3.9K
R10 2.2K
R11 8.2K
R12 5.6K
R13 27K
R01 1.8K
R15 2.2K
R16 470
R17 680
R18 10K
R19 2.2K
R20 2.7K
R21 560
R22 470
R23 680
R24 3.9K
R25 3.9K
R26 1.5K
R27 8.2K
R28 1K
R29 1.5K
R30 1.5K
R31 2.7K
R32 470
R33 1.2K
R35 820
R39 1.8K
R40 4.7K
R41 2.7K
R42 1.8K
R43 2.7K
R44 470
R45 470
R46 2.7K
R47 560
R48 2.2K
R49 390
R50 1K
R51 1K
R69 22K
R70 8.2K
C01 18P (SL)
C02 18P (SL)
C03 39P (SL)
C04 27P (SL)
C05 27P (SL)
C06 0.022 (F Z)
C07 0.01(F Z)
C09 47/6.3
C10 220P (SL)
C11 56P
C12 220P (SL)
C13 0.022 (BK)
C14 68P (SL)
C15 150P (SL)
C16 39P (SL)
C17 0.047 (F)
C19 0.022 (BK)
C20 47P (SL)
C21 4.7/50
C23 1/50
C24 390P (SL)
C25 180P (SL)
C26 10P (SL)
C27 22P (SL)
C28 47P (SL)
C29 56P (SL)
C30 18P (SL)
C31 100P (SL)
C32 10/16
C33 10/16
C34 0.4
C35 82P (SL)
C36 6P (SL)
C37 39P (SL)
C42 1/50
C63 10/16
C67 0.022 (FZ)
C69 0.01(F Z)
C71 0.022 (BK)
C76 4.7/50
L01 22 uH
L02 47uH
L03 33uH
L04 22uH
L06 82uH
L07 180 uH
L08 330
L09 330 uH
L10 330uH
L12 56uH
L13 68 uH
L14 27 uH
L15 39uH
L16 47uH
L19 10 uH
Y/C BLOCK SYMBOL NO. #300** ~

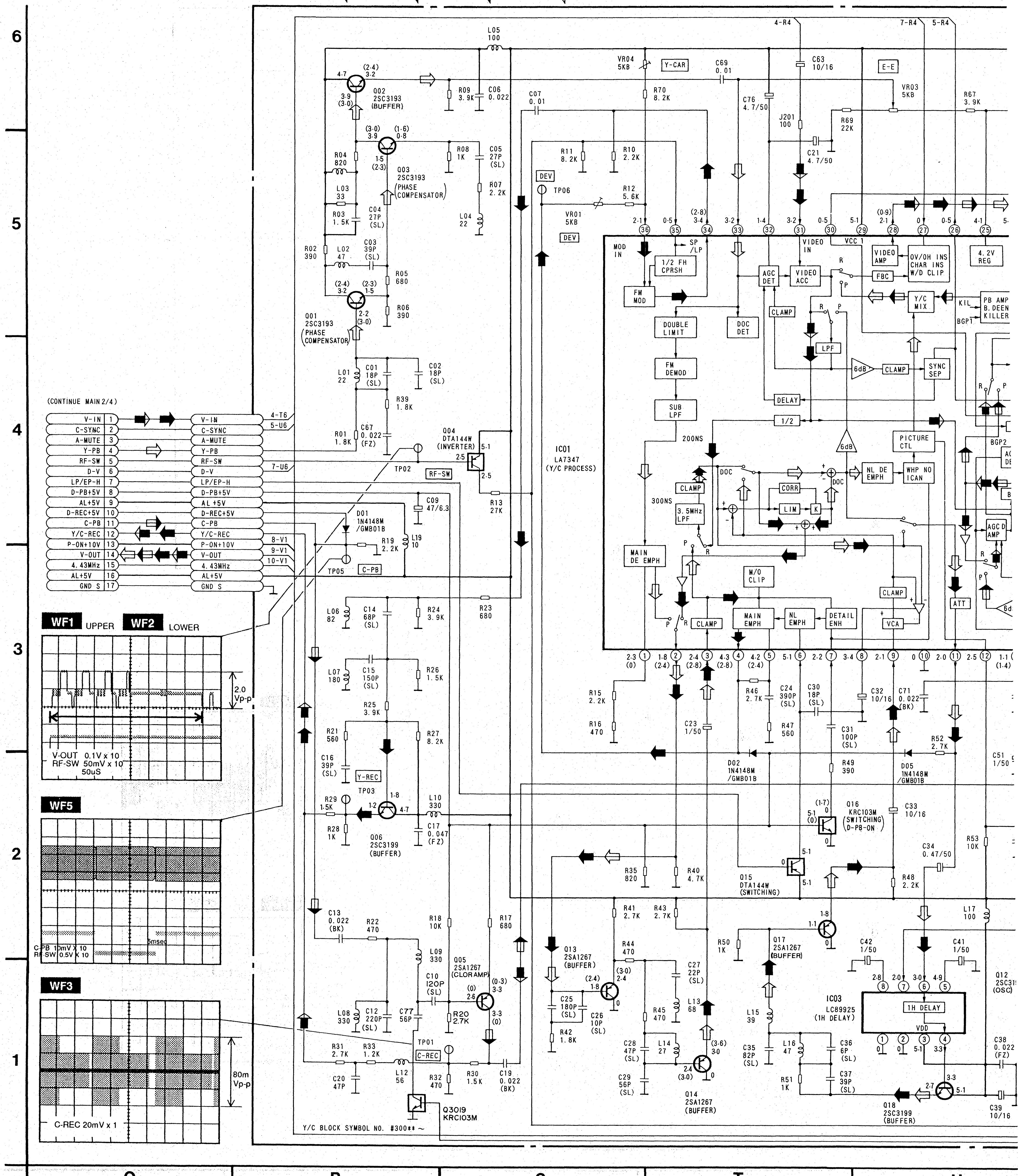


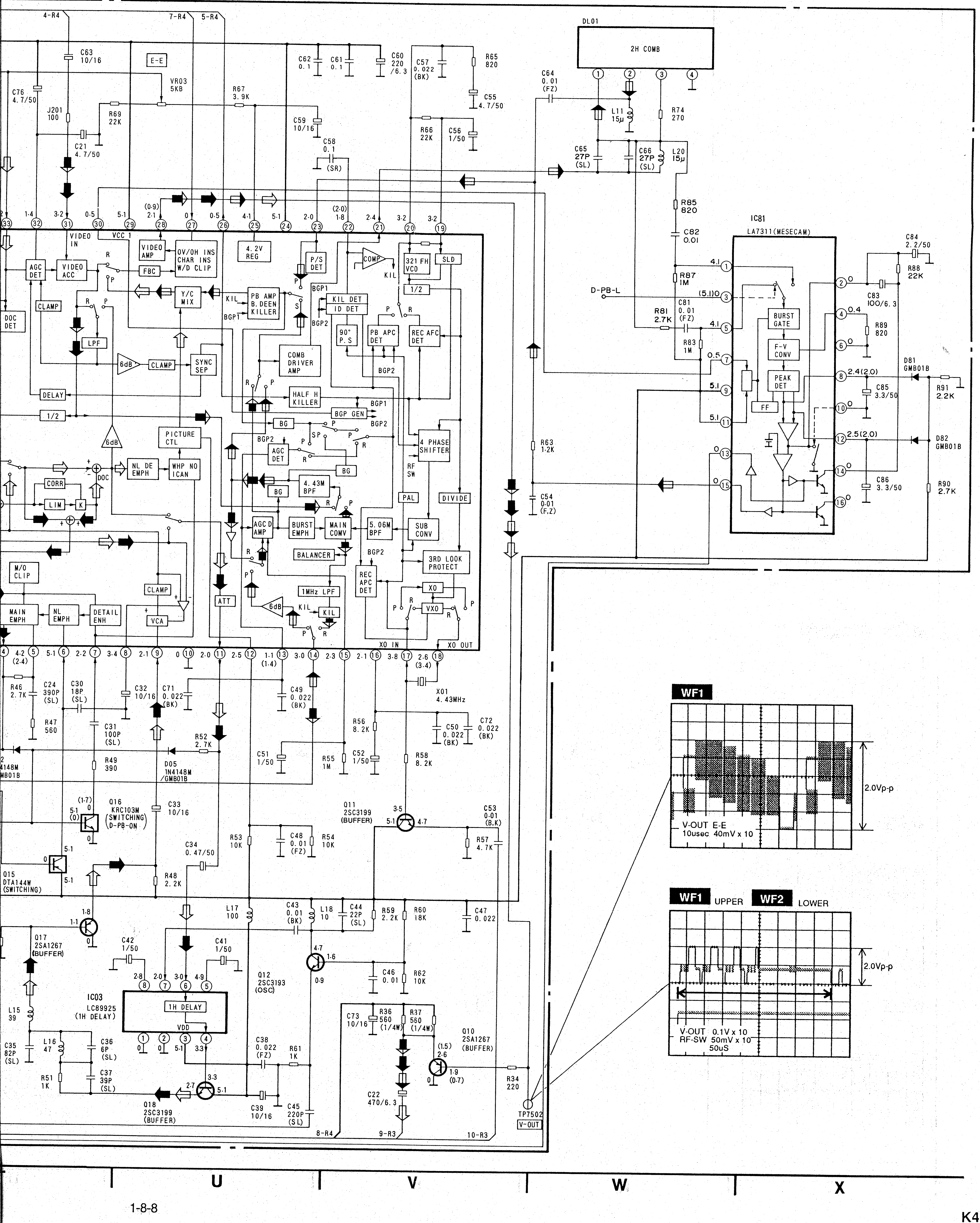
7-R4
5-R4
DL01
2H COMB
C63 10/16
E-E
VR03 5KB
R69 22K
C21 4.7/50
R67 3.9K
C62 0.1
C61 0.1
C60 220 /6.3
C57 0.022 (BK)
R65 820
C55 4.7/50
C59 10/16
C58 0.1 (SR)
R66 22K
C56 1/50
C64 0.01 (FZ)
L11 15 uH
R74 270
C65 12P (SL)
C66 22P (SL)
L20 22uH
VIDEO IN
VCC 1
VIDEO AMP
OV/OH INS CHAR INS W/D CLIP
4.2V REG
P/S DET
COMP
KIL
321 FH VCO
SLD
1/2
FBC
Y/C MIX
PB AMP B.DEEN KILLER
KIL DET
ID DET
BGP1
BGP2
90° P.S
PB APC DET
REC AFC DET
LPF
6dB
CLAMP
SYNC SEP
COMB DRIVER AMP
HALF H KILLER
BGP GEN
BG
PICTURE CTL
AGC DET
4 PHASE SHIFTER
NL DE EMPH
WHP NO ICAN
DOC
4.43M BPF
RF SW
PAL
DIVIDE
AGC D AMP
BURST EMPH
MAIN CONV
5.06M BPF
SUB CONV
BALANCER
3RD LOOK PROTECT
REC APC DET
XO
VXO
1MHz LPF
KIL
ATT
CLAMP
DETAIL ENH
VCA
XO IN
XO OUT
C30 18P (SL)
C31 100P (SL)
C32 10/16
C71 0.022 (BK)
C49 0.022 (BK)
X01 4.43MHz
R56 8.2K
C50 0.022 (BK)
C72 0.022 (BK)
R52 2.7K
D05 1N4148M /GMB01B
R49 390
C51 1/50
R55 1M
C52 1/50
R58 8.2K
Q16 KRC103M (SWITCHING) (D-PB-ON)
C33 10/16
Q11 2SC3199 (BUFFER)
C34 0.47/50
R53 10K
C48 0.01 (FZ)
R54 10K
R57 4.7K
C53 0.01 (BK)
R48 2.2K
L17 100uH
C43 0.01 (BK)
L18 10uH
C44 22P (SL)
R59 2.2K
R60 18K
C47 0.022
C42 1/50
C41 1/50
Q12 2SC3193 (OSC)
C46 0.01 (F,Z)
R62 10K
IC03 LC89925 (1H DELAY)
1H DELAY
VDD
C73 10/16
R36 560 (1/4W)
R37 560 (1/4W)
Q10 2SA1267 (BUFFER)
C36 6P (SL)
C37 39P (SL)
C38 0.022 (FZ)
R61 1K
R34 220
C22 470/6.3
Q18 2SC3199 (BUFFER)
C39 10/16
C45 220P (SL)
TP7502 V-OUT
8-R4
9-R3
10-R3
R63 1.2K
C54 0.01 (F,Z)
WF1
2.0Vp-p
V-OUT E-E
10usec 40mV x 10
WF1 UPPER
WF2 LOWER
2.0Vp-p
V-OUT 0.1V x 10
RF-SW 50mV x 10
50uS

| U | V | W | X |
|---|---|---|---|

# Main 3/4 Schematic Diagram (9A-027S)

⇦ PB-Y SIGNAL ⇦ PB-C SIGNAL ⬅ REC-Y SIGNAL ⬅ REC-C SIGNAL


6
5
4
3
2
1
Q
R
S
T
U
(CONTINUE MAIN 2/4)
V-IN 1
C-SYNC 2
A-MUTE 3
Y-PB 4
RF-SW 5
D-V 6
LP/EP-H 7
D-PB+5V 8
AL+5V 9
D-REC+5V 10
C-PB 11
Y/C-REC 12
P-ON+10V 13
V-OUT 14
4.43MHz 15
AL+5V 16
GND S 17
4-T6
5-U6
7-U6
8-V1
9-V1
10-V1
4-R4
7-R4
5-R4
WF1 UPPER
WF2 LOWER
2.0 Vp-p
V-OUT 0.1V x 10
RF-SW 50mV x 10
50uS
WF5
C-PB 10mV x 10
RF-SW 0.5V x 10
5msec
WF3
80m Vp-p
C-REC 20mV x 1
Q02 2SC3193 (BUFFER)
Q03 2SC3193 (PHASE COMPENSATOR)
Q01 2SC3193 (PHASE COMPENSATOR)
Q04 DTA144W (INVERTER)
Q06 2SC3199 (BUFFER)
Q05 2SA1267 (CLOR AMP)
Q3019 KRC103M
Q13 2SA1267 (BUFFER)
Q14 2SA1267 (BUFFER)
Q15 DTA144W (SWITCHING)
Q16 KRC103M (SWITCHING) (D-PB-ON)
Q17 2SA1267 (BUFFER)
Q18 2SC3199 (BUFFER)
Q12 2SC31 (OSC)
IC01 LA7347 (Y/C PROCESS)
IC03 LC89925 (1H DELAY)
1H DELAY
VDD
D01 1N4148M /GMB01B
D02 1N4148M /GMB01B
D05 1N4148M /GMB01B
L05 100
VR04 5KB
VR03 5KB
VR01 5KB
Y-CAR
E-E
DEV
TP06
TP02
TP05
TP03
TP01
RF-SW
C-PB
Y-REC
C-REC
J201 100
MOD IN
SP /LP
1/2 FH CPRSH
FM MOD
DOUBLE LIMIT
FM DEMOD
SUB LPF
DOC DET
AGC DET
VIDEO ACC
VIDEO IN
VCC 1
VIDEO AMP
OV/OH INS CHAR INS W/D CLIP
4.2V REG
FBC
Y/C MIX
PB AMP B.DEEN KILLER
KIL
BGP1
BGP2
CLAMP
LPF
6dB
SYNC SEP
DELAY
1/2
PICTURE CTL
200NS
300NS
DOC
CORR
LIM
K
NL DE EMPH
WHP NO ICAN
3.5MHz LPF
MAIN DE EMPH
M/O CLIP
MAIN EMPH
NL EMPH
DETAIL ENH
VCA
ATT
AGC AMP
Y/C BLOCK SYMBOL NO. #300** ~


DL01
2H COMB
C64 0.01 (FZ)
L11 15μ
R74 270
C65 27P (SL)
C66 27P (SL)
L20 15μ
R85 820
C82 0.01
IC81
LA7311(MESECAM)
R87 1M
D-PB-L
R81 2.7K
C81 0.01 (FZ)
R83 1M
BURST GATE
F-V CONV
PEAK DET
FF
C84 2.2/50
R88 22K
C83 100/6.3
R89 820
D81 GMB01B
R91 2.2K
C85 3.3/50
D82 GMB01B
C86 3.3/50
R90 2.7K
R63 1.2K
C54 0.01 (F.Z)
C63 10/16
E-E
VR03 5KB
R67 3.9K
C76 4.7/50
J201 100
R69 22K
C21 4.7/50
C62 0.1
C61 0.1
C60 220 /6.3
C57 0.022 (BK)
R65 820
C55 4.7/50
C59 10/16
C58 0.1 (SR)
R66 22K
C56 1/50
VIDEO IN
VCC 1
AGC DET
VIDEO ACC
VIDEO AMP
OV/OH INS CHAR INS W/D CLIP
4.2V REG
P/S DET
COMP
321 FH VCO
SLD
FBC
Y/C MIX
PB AMP B.DEEN KILLER
KIL DET
ID DET
CLAMP
DOC DET
LPF
6dB
SYNC SEP
COMB DRIVER AMP
90° P.S
PB APC DET
REC AFC DET
DELAY
HALF H KILLER
BGP GEN
1/2
PICTURE CTL
AGC DET
4 PHASE SHIFTER
NL DE EMPH
WHP NO ICAN
CORR
LIM
K
DOC
4.43M BPF
PAL
DIVIDE
AGC D AMP
BURST EMPH
MAIN CONV
5.06M BPF
SUB CONV
BALANCER
3RD LOOK PROTECT
M/O CLIP
CLAMP
ATT
REC APC DET
XO
VXO
1MHz LPF
KIL
MAIN EMPH
NL EMPH
DETAIL ENH
VCA
XO IN
XO OUT
R46 2.7K
C24 390P (SL)
C30 18P (SL)
R47 560
C31 100P (SL)
C32 10/16
C71 0.022 (BK)
C49 0.022 (BK)
X01 4.43MHz
R56 8.2K
C50 0.022 (BK)
C72 0.022 (BK)
R52 2.7K
D05 1N4148M /GMB01B
R49 390
C51 1/50
R55 1M
C52 1/50
R58 8.2K
Q16 KRC103M (SWITCHING) (D-PB-ON)
C33 10/16
Q11 2SC3199 (BUFFER)
C53 0.01 (B.K)
R57 4.7K
C34 0.47/50
R53 10K
C48 0.01 (FZ)
R54 10K
Q15 DTA144W (SWITCHING)
R48 2.2K
L17 100
C43 0.01 (BK)
L18 10
C44 22P (SL)
R59 2.2K
R60 18K
C47 0.022
Q17 2SA1267 (BUFFER)
C42 1/50
C41 1/50
Q12 2SC3193 (OSC)
C46 0.01
R62 10K
IC03 LC89925 (1H DELAY)
1H DELAY
VDD
L15 39
L16 47
C36 6P (SL)
C35 82P (SL)
C37 39P (SL)
R51 1K
C38 0.022 (FZ)
R61 1K
C73 10/16
R36 560 (1/4W)
R37 560 (1/4W)
Q10 2SA1267 (BUFFER)
C22 470/6.3
Q18 2SC3199 (BUFFER)
C39 10/16
C45 220P (SL)
R34 220
TP7502 V-OUT
4-R4
7-R4
5-R4
8-R4
9-R3
10-R3
WF1
2.0Vp-p
V-OUT E-E 10usec 40mV x 10
WF1 UPPER
WF2 LOWER
V-OUT 0.1V x 10
RF-SW 50mV x 10
50uS

U V W X

# DECK MECHANISM BLOCK

# VIDEO RECORDER

## 8A-007 / 8A-027 / 9A-027S

**Sec. 2: Deck Mechanism Block**

- **Standard Maintenance**
- **Alignment for Mechanism**
- **Disassembly / Assembly of Mechanism**
- **Deck Schematic Diagram**
- **Deck CBA' s**
- **Deck Exploded Views**
- **Deck Parts List**

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# STANDARD MAINTENANCE

## Service Schedule of Components

H: Hours ○: Check ●: Change

| Deck | | Periodic Service Schedule | | | |
|---|---|---|---|---|---|
| Ref. No. | Parts Name | 1,000 H | 2,000 H | 3,000 H | 4,000 H |
| B2 | Cylinder Assembly | ○ | ● | ○ | ● |
| B3 | Loading Motor | | | ● | |
| B6 | Pinch Roller Arm Assembly | | ● | | ● |
| B8 | Pulley Assembly | | ● | | ● |
| B21 | Loading Belt | | ● | | ● |
| B27 | Band Brake Assembly | | ● | | ● |
| B28 | Main Brake S Assembly | | ● | | ● |
| B29 | Main Brake T Assembly | | ● | | ● |
| B30 | T Brake Arm Assembly | | ● | | ● |
| B31 | ACE Head Assembly | | | ● | |
| B32 | Reel Assembly | | | ● | |
| B37 | Capstan Motor | | ● | | ● |
| B52 | Capstan Belt | | ● | | ● |
| B54 | Ground Brush Assembly | | | ● | |
| B73 | Full Erase Head | | | ● | |
| B132 | Clutch Assembly | | ● | | ● |
| B133 | Arm Idler Assembly | | ● | | ● |

**Note:**

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / Audio Control Head / Full Erase Head) using 90% Isopropyl Alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

# Cleaning

## Cleaning of Video Head

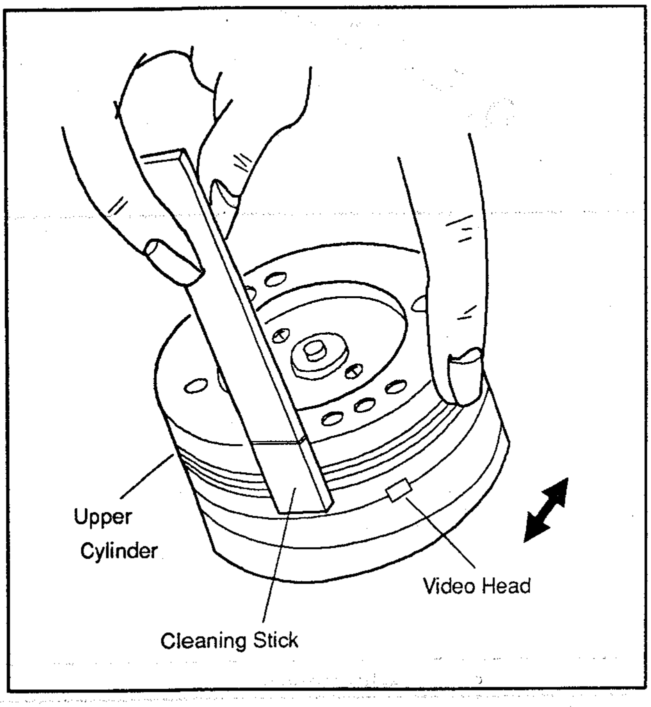
Clean the head with a head cleaning stick or chamois skin.

**Procedure**

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois skin and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

**Notes:**

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois skin.



## Cleaning of Audio Control Head

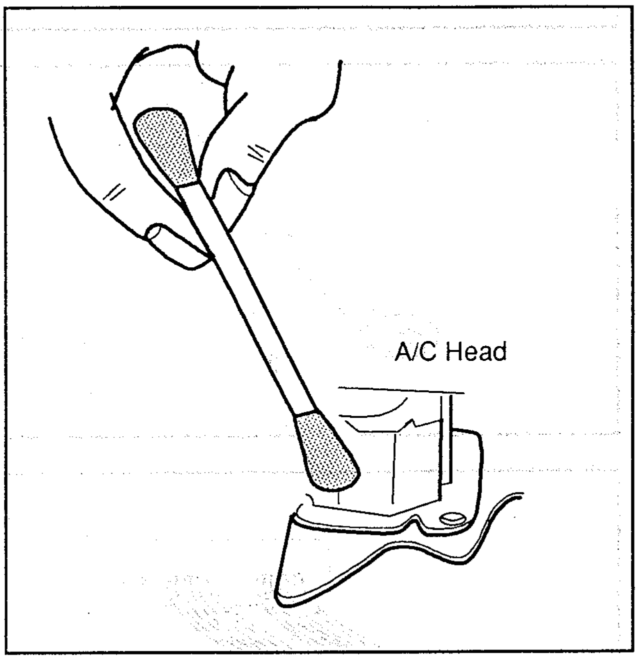
Clean the head with a cotton swab.

**Procedure**

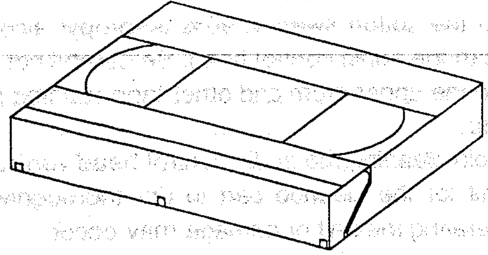
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the audio control head. Be careful not to damage the upper drum and other tape running parts.

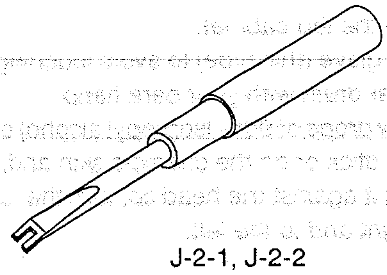
**Notes:**

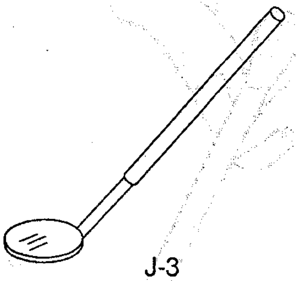
1. Avoid cleaning the audio control head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.

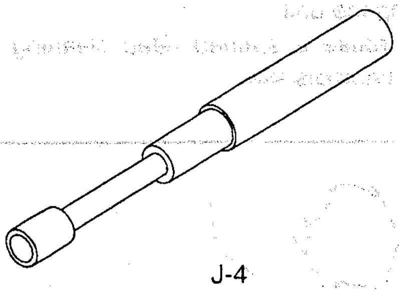


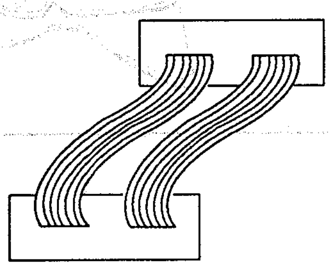
# SERVICE FIXTURE AND TOOLS


J-1-1, J-1-2


J-2-1, J-2-2


J-3


J-4


J-5

| Ref. No. | Name | Part No. | Adjustment |
|---|---|---|---|
| J-1-1 | Alignment Tape | F6-A | Head Adjustment of Audio Control Head |
| J-1-2 | Alignment Tape | F6-N | Azimuth and X Value Adjustment of Audio Control Head / Adjustment of Envelope Waveform |
| J-2-1 | Special Driver, Large | FSJ-0001 | X Value |
| J-2-2 | Special Driver, Small | FSJ-0006 | Guide Roller |
| J-3 | Mirror | FSJ-0004 | Tape Transportation Check |
| J-4 | Box Driver, Mx3 | FSJ-0005 | A/C Head Height |
| J-5 | Deck Extension Cable | N1099XA | All Mechanical and Electrical Adjustments |

**Note:** Before starting any adjustment, take the Deck Assembly out of the cabinet and use J-5 to connect the Deck Assembly with the Main CBA.

# MECHANICAL ALIGNMENT PROCEDURES

## Service Information

**A.** Method for Manual Tape Loading/Unloading of VCR.

To place the Cassette Holder in the down position, turn the Pulley Assembly clockwise as viewed from the back of Deck. To place the Cassette Holder in the up position, turn the Pulley Assembly counterclockwise as viewed from the back of the Deck.

**B.** How to place the Cassette Holder in the down position without a cassette tape.

METHOD

1. Disconnect the AC Plug and remove the Top Cover.
2. Cover the LED Sensors located below Prism L and Prism R.

**Note:** The tape sensor is extremely susceptible to damage from static electricity. When handling the tape sensor use a conductive mat, a grounded soldering iron, and so on, to protect the tape sensor from static damage.

3. Turn the Pulley Assembly clockwise as viewed from the back of the Deck.

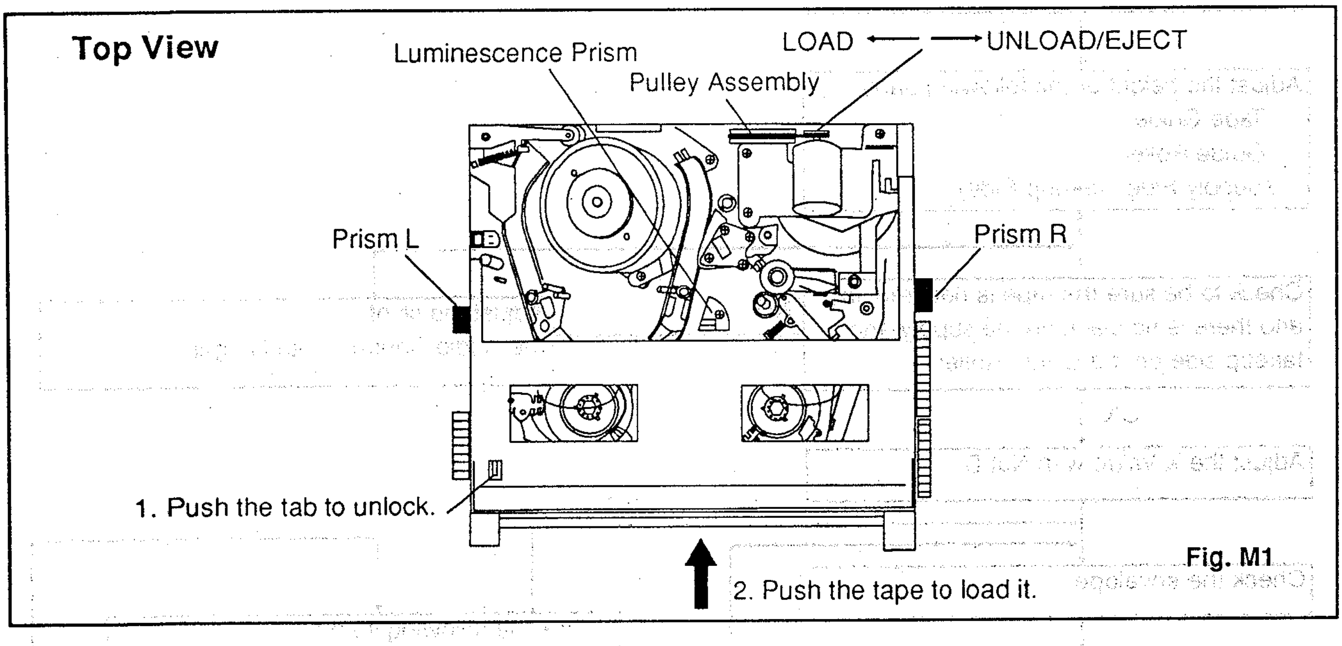

Top View
Luminescence Prism
LOAD
UNLOAD/EJECT
Pulley Assembly
Prism L
Prism R
1. Push the tab to unlock.
2. Push the tape to load it.

Fig. M1

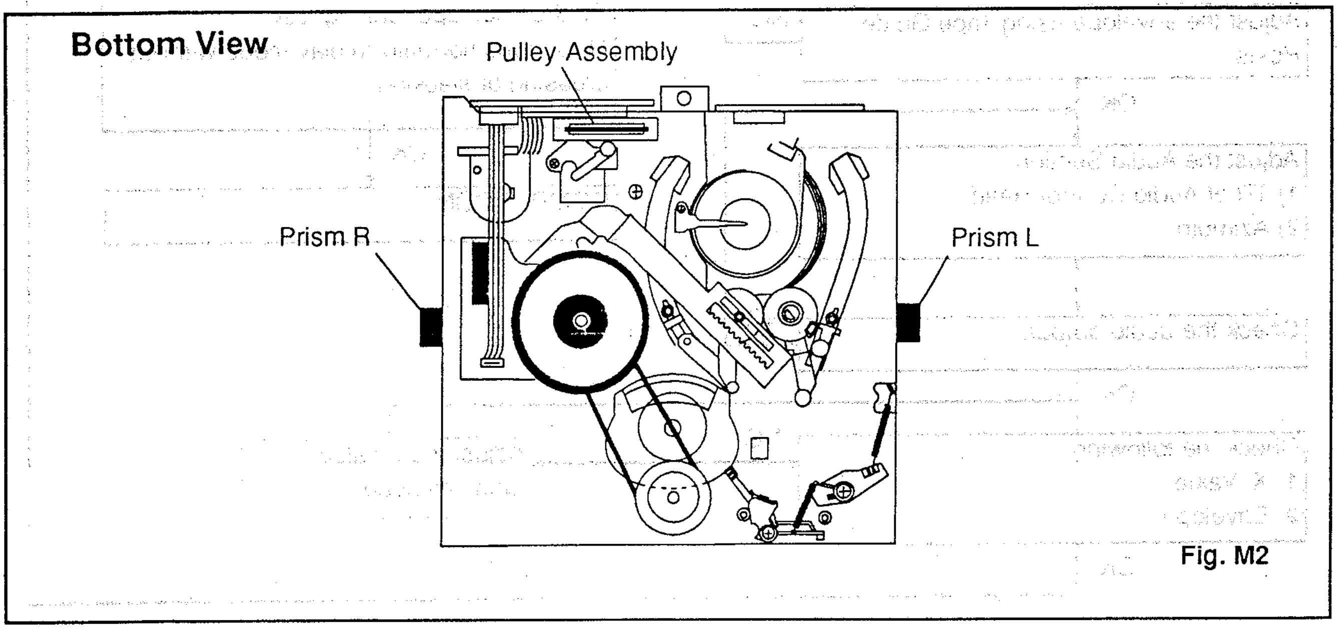

Bottom View
Pulley Assembly
Prism R
Prism L

Fig. M2

## 1. Tape Interchangeability Alignment (Final Alignment)

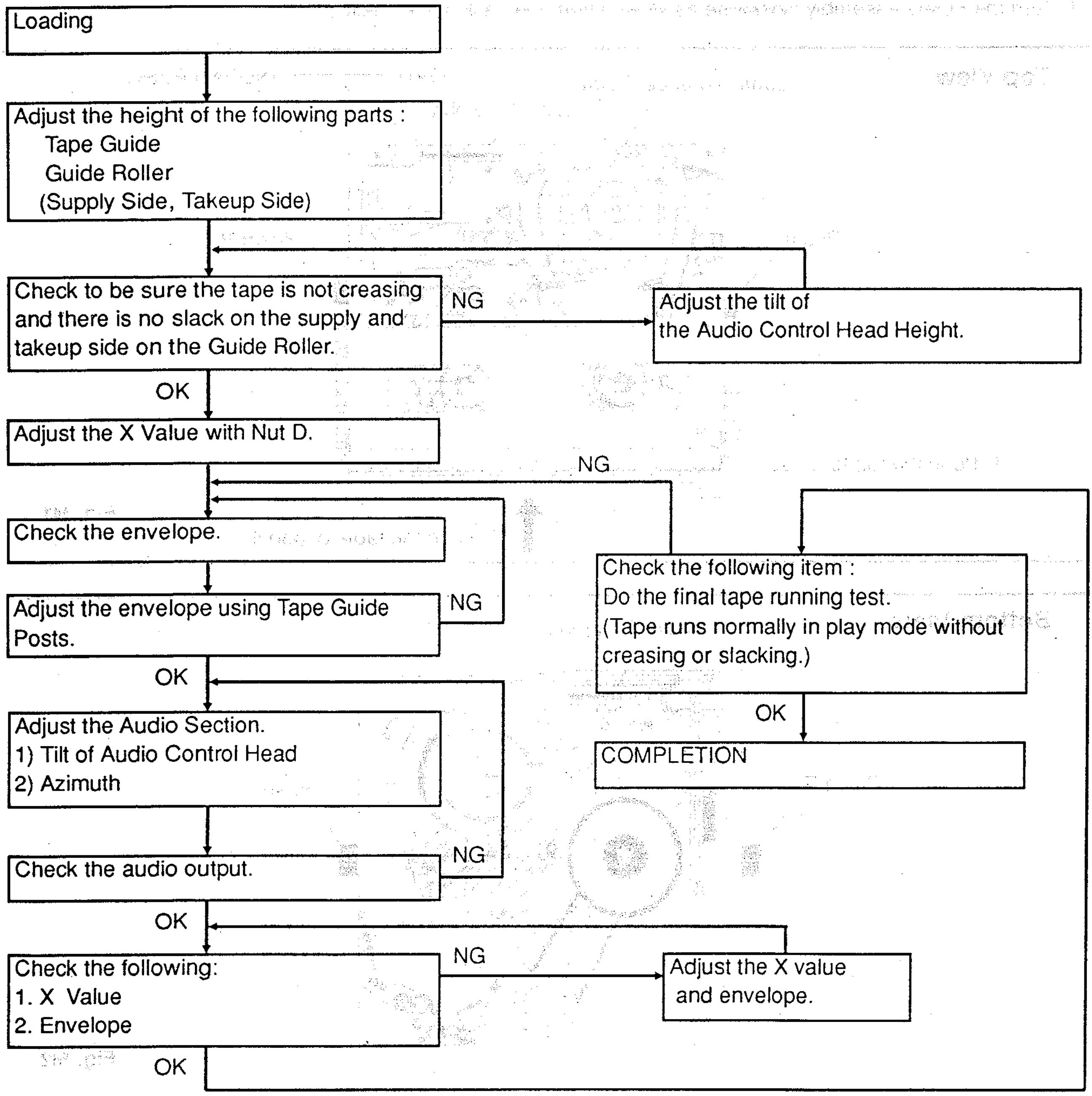
**Note:** To do these alignment procedures, be sure that the Tracking Control Circuit is set to the Neutral mode.

**Equipment required :**

Dual Trace Oscilloscope
VHS Alignment Tape (F6-A, F6-N)
Post Alignment Screwdriver
X-Position Alignment Fixture
Screwdriver (For the Tape Guide Rollers)
Box Driver M3

**Note:** After this Mechanical Alignment is completed, secure screw [C] shown in Fig.M6 with lock paint and do all the procedures in the Electrical Adjustment.

Tape Running Alignment Flowchart


Loading
Adjust the height of the following parts :
Tape Guide
Guide Roller
(Supply Side, Takeup Side)
Check to be sure the tape is not creasing and there is no slack on the supply and takeup side on the Guide Roller.
NG
Adjust the tilt of the Audio Control Head Height.
OK
Adjust the X Value with Nut D.
NG
Check the envelope.
Adjust the envelope using Tape Guide Posts.
NG
OK
Check the following item :
Do the final tape running test.
(Tape runs normally in play mode without creasing or slacking.)
OK
COMPLETION
Adjust the Audio Section.
1) Tilt of Audio Control Head
2) Azimuth
Check the audio output.
NG
OK
Check the following:
1. X Value
2. Envelope
NG
Adjust the X value and envelope.
OK

## 1-A. Preliminary Checking and Alignment of Tape Running

**Purpose:**

To make sure that the tape running is well stabilized.

**Symptom of Misalignment:**

If the tape runs with unstability, the tape will be damaged.

1. Play back a cassette tape and check that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig M3 and M4)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Post Adjustment Screwdriver. (Refer to Fig. M3 and M5)

   **Note:** Before turning the Guide Rollers, loosen the Lock Screw using a lock screwdriver.

**Note:** Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

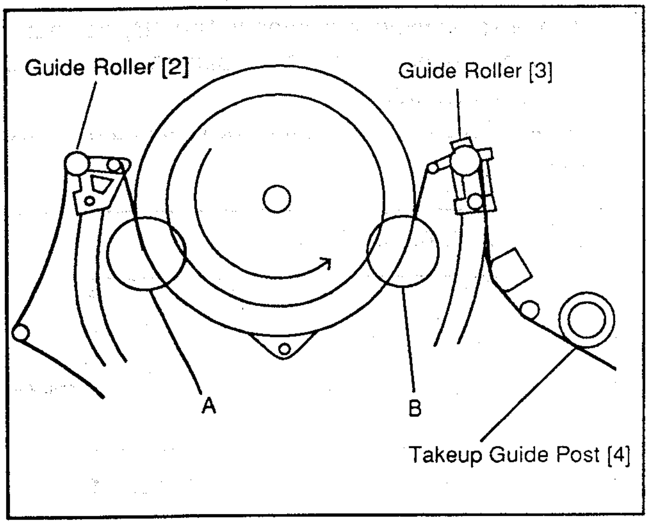

Guide Roller [2]
Guide Roller [3]
A
B
Takeup Guide Post [4]

Fig. M3

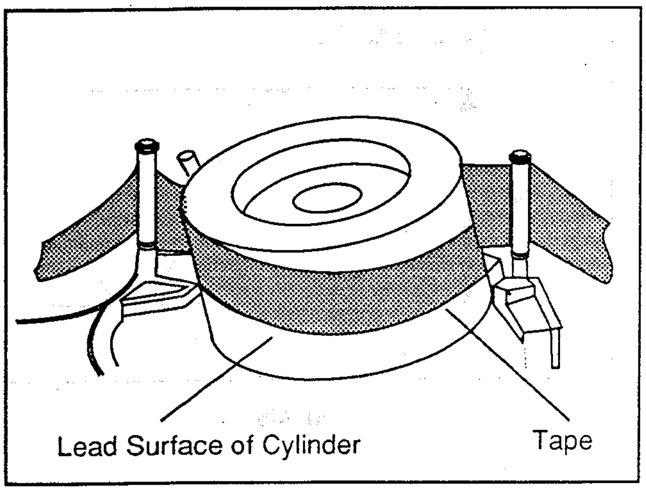

Lead Surface of Cylinder
Tape

Fig. M4

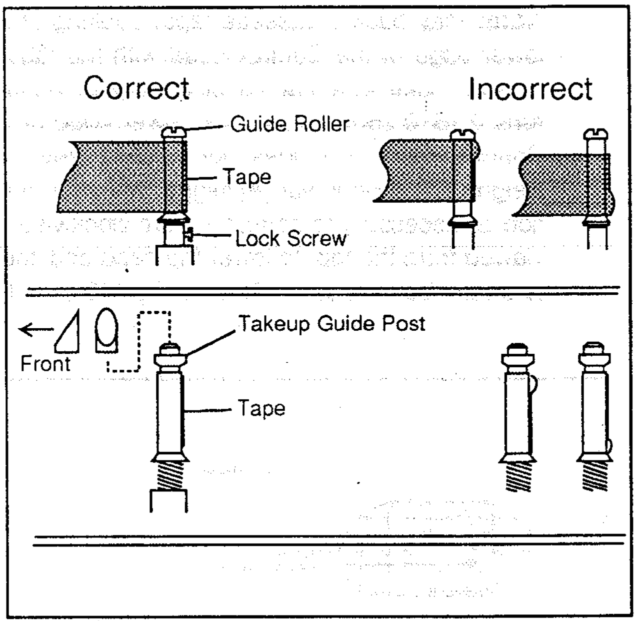

Correct
Incorrect
Guide Roller
Tape
Lock Screw
Front
Takeup Guide Post
Tape

Fig. M5

## 1-B. Preliminary Checking of Audio/ Control Head Height

**Purpose :**

To make sure that the tape runs properly along the Control Head.

**Symptom of Misalignment:**

If the control signal is not properly picked up, proper Servo Operation cannot be achieved.

The head height adjustment is required when the Audio/Control Head is replaced.

For final alignment, do the adjustments described in 1-C and 1-D.

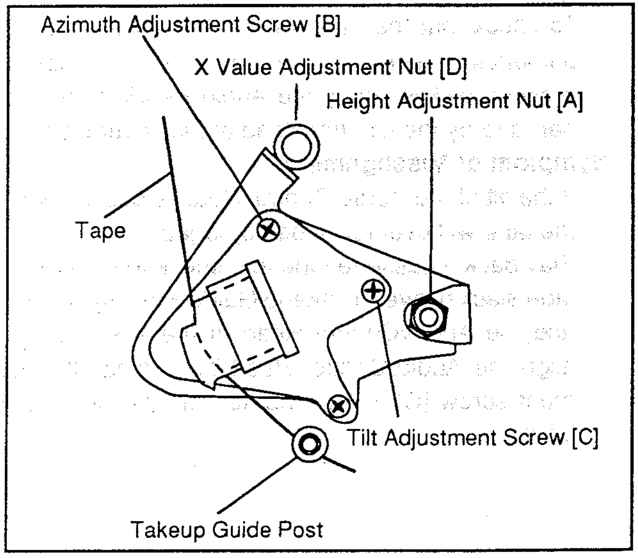

Azimuth Adjustment Screw [B]
X Value Adjustment Nut [D]
Height Adjustment Nut [A]
Tape
Tilt Adjustment Screw [C]
Takeup Guide Post

Fig. M6

**Note:** Play back a cassette tape. Looking at the lower edge of the Control Head with the tape in motion, make sure that the lower edge of the tape runs 0.15~0.25mm above the lower edge of the Control Head. If it does not run properly, turn Height Adjustment Nut [A] slightly in either direction as necessary to correct it. Turn clockwise, as viewed from the top, to lower the head and counterclockwise to raise it. (Refer to Fig. M6 and M7.)

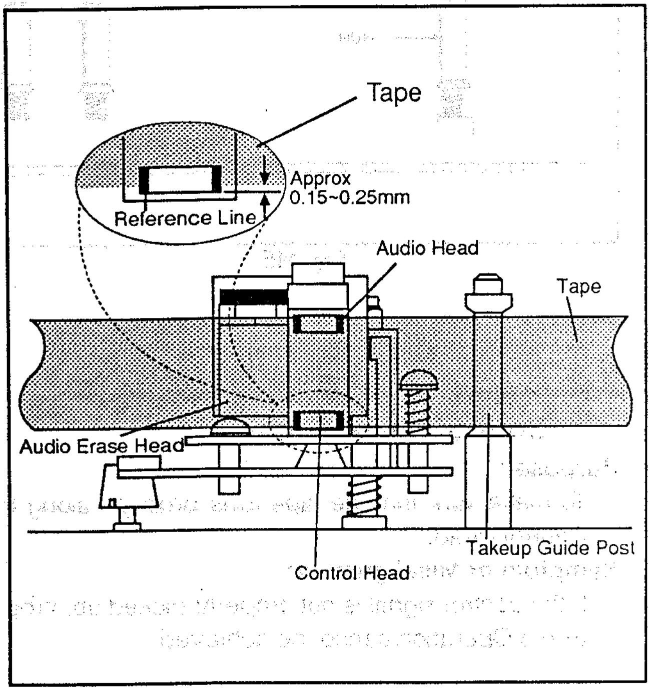


Fig. M7

## 1-C. Preliminary Checking of Tilt of Audio/Control Head

**Purpose:**

To check that the tape running is well stabilized. In particular, check that the signals on the tape are properly picked up by the Audio Head at the upper part and by the Control Head at the lower part.

**Symptom of Misalignment:**

If the tilt of the Audio/Control Head is poorly aligned, the tape will eventually be damaged.

Play back a cassette tape and check that there is no tape slack between Takeup Guide Post [4] in Fig. M3 and the Audio/Control Head. If there is any slack, align the Audio/Control Head by turning tilt adjustment screw [C] in Fig. M6 so that the tape has no slack.

## 1-D. Final Alignment of Audio/Control Head Height

**Purpose:**

To align the position and height of the Audio/Control Head so that it meets the tape tracks properly.

**Symptom of Misalignment:**

If the position of the Audio/Control Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Check that there is no tape slack between the Takeup Guide Roller and the Audio/Control Head. If there is any tape slack, remove it by turning Tilt Adjustment screw [C]. Then realign the height of the Guide Rollers (Refer to 1-A).
3. Play back the Color Bar (1kHz, Audio) on the alignment tape (F6-A) and check that the audio signal output level is 1kHz. Finally, adjust Height Adjustment Nut [A] so that the output level is at maximum.(Fig. M6, Fig. M8[b])
4. Adjust Azimuth Adjustment Nut [B] so that the output level on the AC Voltmeter is at maximum.(Fig. M6)

**Note:** Secure screw [C] with lock paint after realignment.

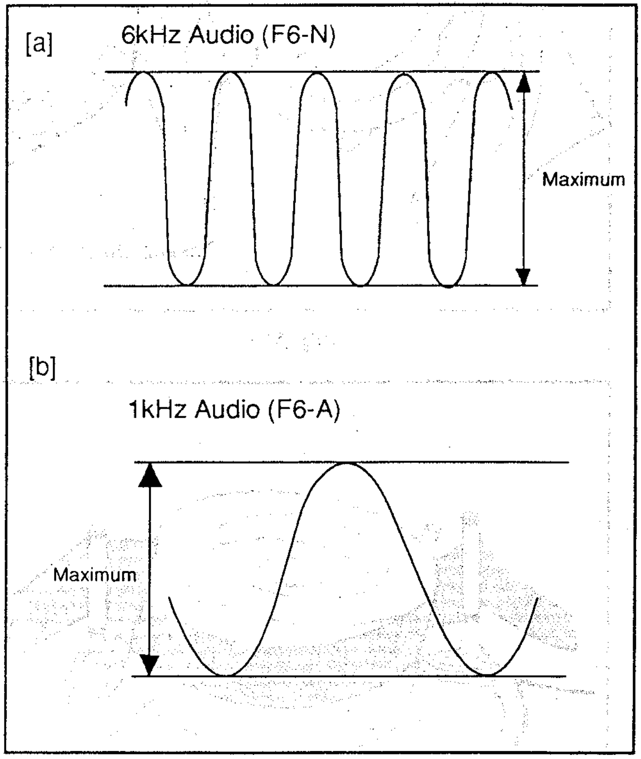


Fig. M8

## Azimuth Alignment of Audio/Control Head

**Purpose:**

To correct the Azimuth alignment so that the Audio/Control Head angle meets tape tracks properly.

**Symptom of Misalignment:**

If the position of the Audio/Control Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Play back the Gray Scale (6kHz, audio) on the alignment tape (F6-N), and adjust Height Adjustment Nut [A] so that the output level on the AC Voltmeter or the waveform of the oscilloscope is at maximum. (Fig. M6, Fig. M8[a])

## 1-E. X Value Alignment

**Purpose:**

To align the Horizontal Position of the Audio/Control Head.

**Symptom of Misalignment:**

If the Horizontal Position of the Audio/Control Head is not properly aligned, maximum envelope cannot be obtained at the Neutral mode of the Tracking Control Circuit.

1. Set the Tracking Control Circuit to the Neutral mode by pressing CH UP and DOWN buttons on VCR simultaneously.
2. Connect the oscilloscope to TP of C-PB on the Main CBA. Use TP of RF-SW as a trigger.
3. Play back the Gray Scale of the Alignment Tape (F6-N) and confirm that the PB FM signal is present.
4. Adjust X Value adjustment Nut [D] with the X Position Adj-Fixture so that the PB FM signal at the TP of C-PB or at the TP of A-OUT is maximum. (Fig.M9)

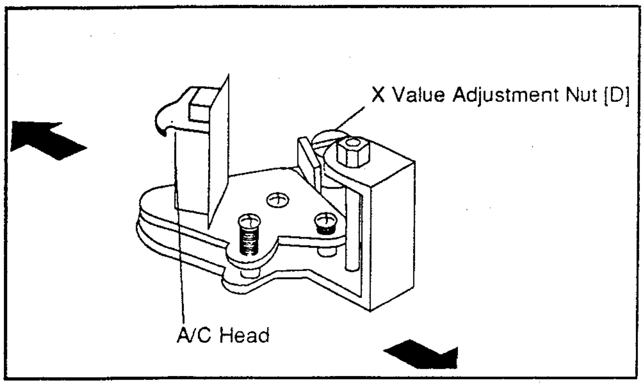


Fig. M9

## 1-F. Final Checking/Adjustment of Envelope Waveform

**Purpose:**

To achieve a satisfactory picture and precise tracking.

**Symptom of Misalignment:**

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control.

1. Set the Tracking Control Circuit to the Neutral mode by pressing both CH UP and DOWN buttons on VCR simultaneously.
2. Connect the oscilloscope to TP of C-PB on the Main CBA. Use TP of RF-SW as a trigger.
3. Play back the Gray Scale on the Alignment Tape (F6-N). Adjust the height of Guide Rollers [2] and [3] (Fig.M3) watching the oscilloscope display so that the envelope becomes as flat as possibile. If adjustment is required, turn the top of the Guide Roller with the Post Adjustment Screwdriver.

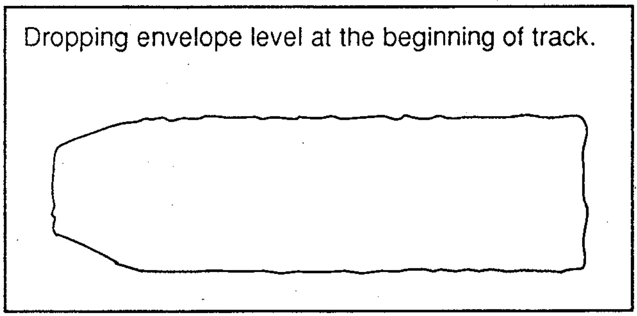


Fig. M10

4. When the envelope is as shown in Fig. M10, adjust the height of Guide Roller [2] (Refer to Fig.M3) so that the waveform looks like the one shown in Fig. M12.

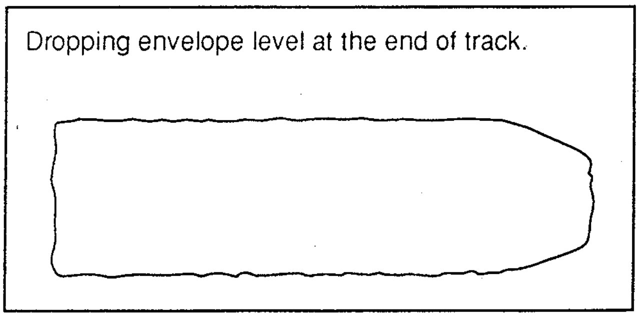


Fig. M11

5. When the envelope is as shown in Fig. M11, adjust the height of Guide Roller [3] (Refer to Fig.M3) so that the waveform looks like the one shown in Fig. M12.

Envelope is adjusted properly. (No envelope drop)

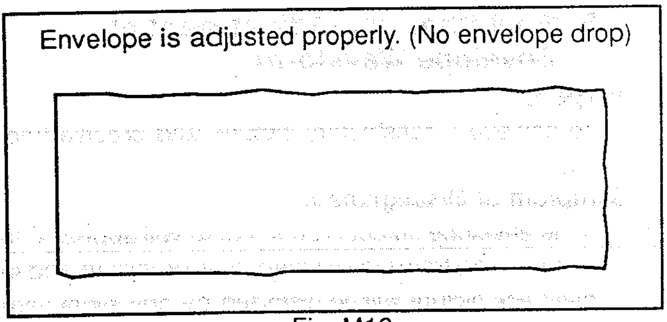


Fig. M12

6. When Guide Rollers [2] and [3] (Refer to Fig.M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M12.

**Note:** Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig.M3), tighten the Lock Screws on these Guide Rollers [2] and [3], using a lock screw wrench. Then check the X VALUE by pushing the Tracking Control Up or Down buttons alternately, to check the symmetry of the envelope. If required, redo the "X VALUE ALIGNMENT." Secure screw [C] shown in Fig.M6 with lock paint.

# DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

## Main Mechanism

This procedure starts with the condition that the Cabinet Parts and Front Loading Assembly have been removed. (Refer to the Cabinet Disassembly Instructions of Section 1.) Also, all the following procedures for adjustment and parts replacement should be done in Stop mode. When reassembling, follow the steps in reverse order.

| STEP /LOC. No. | START-ING No. | PART | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|
| | | | | Fig. No. | REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER | ADJUSTMENT CONDITION |
| [1] | [1] | Motor Holder Assembly | T | DM1 DM4 DM5 | 3(S-1), (P-7)<br>Loading Belt | (+) |
| [2] | [1] | Loading Motor Assembly | T | DM1 DM3 DM4 | 2(S-2), CN2902 | |
| [3] | [1] | Cassette Drive Lever Assembly | T | DM1 DM4 | | (+) |
| [4] | [1] | Pinch Roller Arm Assembly | T | DM1 DM4 | (C-1)<br>Pinch Roller Spring | |
| [5] | [1] | Pinch Arm Assembly | T | DM1 DM4 | | |
| [6] | [1] | Cam | T | DM1 DM4 | | (+) See Fig. DM4 |
| [7] | [1] | Pulley Assembly | T | DM1 DM5 | Loading Belt<br>(W-1) | (+) |
| [8] | [8] | Joint CBA | T/B | DM1 DM2 DM3 DM6 DM7 | (S-3), CN2801, CN2902, CL2902, CL2901 | For Connecting, Refer to Connectors' Points |
| [9] | [9] | Head Amp CBA | T/B | DM1 DM2 DM3 DM7 | (S-4), (S-14)<br>CN02, CN03, CL02 | For Connecting, Refer to Connectors' Points. |
| [10] | [8] | Mode SW CBA | B | DM2 DM7 | *(L-1) | |
| [11] | [11] | Arm Idler Assembly | T | DM1 DM8 | Clutch Bushing | |
| [12] | [12] | Clutch Assembly | B | DM2 DM8 | (C-2), (W-2)<br>Capstan Belt | |
| [13] | [9] | Capstan Motor Unit | B | DM2 DM9 | 3(S-5) | |
| [14] | [1] | M Lever Holder | T | DM1 DM10 | (S-6) | |
| [15] | [1] | Kick Arm Holder | B | DM2 DM10 | | |
| [16] | [15] | Kick Arm | B | DM2 DM10 | Bushing | |
| [17] | [17] | Mode Change Lever | T | DM1 DM11 | *2(L-2) | (+) |
| [18] | [1] | Main Lever Assembly | T | DM1 DM12 | *(L-3) | |
| [19] | [19] | Tape Guide Assembly | T | DM1 DM12 | *(P-1), *(L-4) | See Fig. DM12 |
| [20] | [20] | A/C Head Assembly | T | DM1 DM13 | Nylon Nut, Head Height Adjustment Spring | See Fig. DM13 |
| [21] | [21] | Tension Lever Sub Assembly | T | DM1 DM14 | *(L-5) | |
| [22] | [21] | Band Brake Sub Assembly | T | DM1 DM14 | (S-7), *(L-6) | |
| [23] | [17] | M Brake (S) | T | DM1 DM15 | *(P-2), *(L-7) | When reassembling, hook the Spring after installation of Mode Change Lever. |
| [24] | [17] | M Brake (S) Lever | T | DM1 DM15 | | |
| [25] | [17] | S Brake Arm | T | DM1 DM15 | *(P-3) | When reassembling, hook the Spring after installation of Mode Change Lever. |

| STEP /LOC. No. | START-ING No. | PART | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|
| | | | | Fig. No. | REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER | ADJUSTMENT CONDITION |
| [26] | [9] | M Brake (T) Assembly | T | DM1 DM15 | | |
| [27] | [17] | T Brake Arm Assembly | T | DM1 DM15 | *(P-4) | When reassembling, hook the Spring after installation of Mode Change Lever |
| [28] | [17] | Reel Base Assemblies (S+T) | T | DM1 DM16 | 2 Poly Slider Washers | |
| [29] | [29] | Earth Brush Assembly | B | DM2 DM17 DM18 | (S-8) | When reassembling, check that the brush is within 1 mm of center of shaft. |
| [30] | [9] | Cylinder Drum Assembly | T | DM1 DM17 | 3(S-9) | |
| [31] | [1] | Moving Guide Assembly | T | DM1 DM19 | | (+) |
| [32] | [1] | Moving Guide T Assembly | T | DM1 DM19 | | (+) |
| [33] | [33] | FE Head | T | DM1 DM19 | (S-10) | |
| [34] | [34] | Main Prism | T | DM1 DM19 | (S-11) | |
| [35] | [1] | Loading Arm M Assembly | B | DM2 DM20 | (C-3) | (+)When installing, match the marks. |
| [36] | [1] | Loading Gear A | B | DM2 DM20 | | (+) |
| [37] | [1] | Loading Gear B | B | DM2 DM20 | | (+) |
| [38] | [38] | Rec Arm | B | DM2 DM21 | (S-12),*(P-5) | |
| [39] | [38] | BT Drive Arm | B | DM2 DM21 | (S-13), (P-6) | |
| *[40] | [40] | Cleaning Head | T | DM1 | (C-4) | |
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |

①: Order of steps in Procedure. When reassembling, follow the steps in reverse order.
These numbers are also used as the identification (Location) No. of parts in Figures.

②: The start No. followed by corresponding part to be removed at this stage. For example, Arm Idler Assembly [11] can be removed without removing any other parts. But BT Drive Arm [39] can be removed only after removing Rec Arm [38].

③: Parts to be removed or installed.

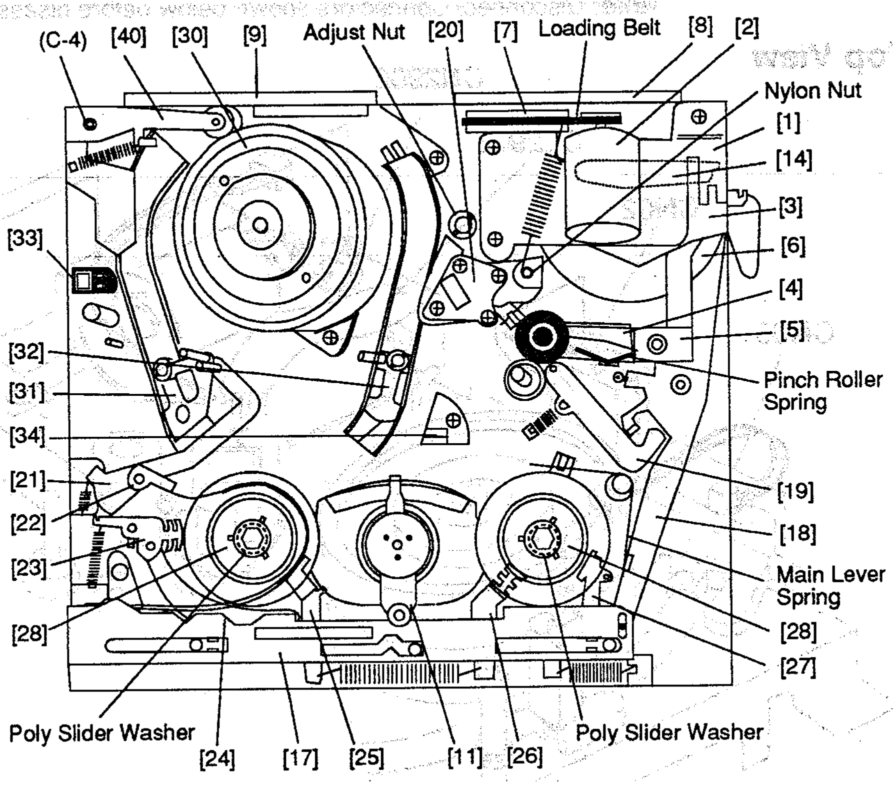
④: Location of part
T=Top B=Bottom R=Right L=Left

⑤: Fig. No. shows Procedure or Part Location

⑥: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or desoldered.
S=Screw, W=Washer, C=Cut Washer, P=Spring, *=Unhook, Unlock, Release, Unplug or Desolder
2(C-2) = two Cut Washers(C-2), 2(L-2) = two Locking Tabs(L-2)

⑦: Adjustment Information for Installation
(+) :Refer to Deck Exploded Views for lubrication information.

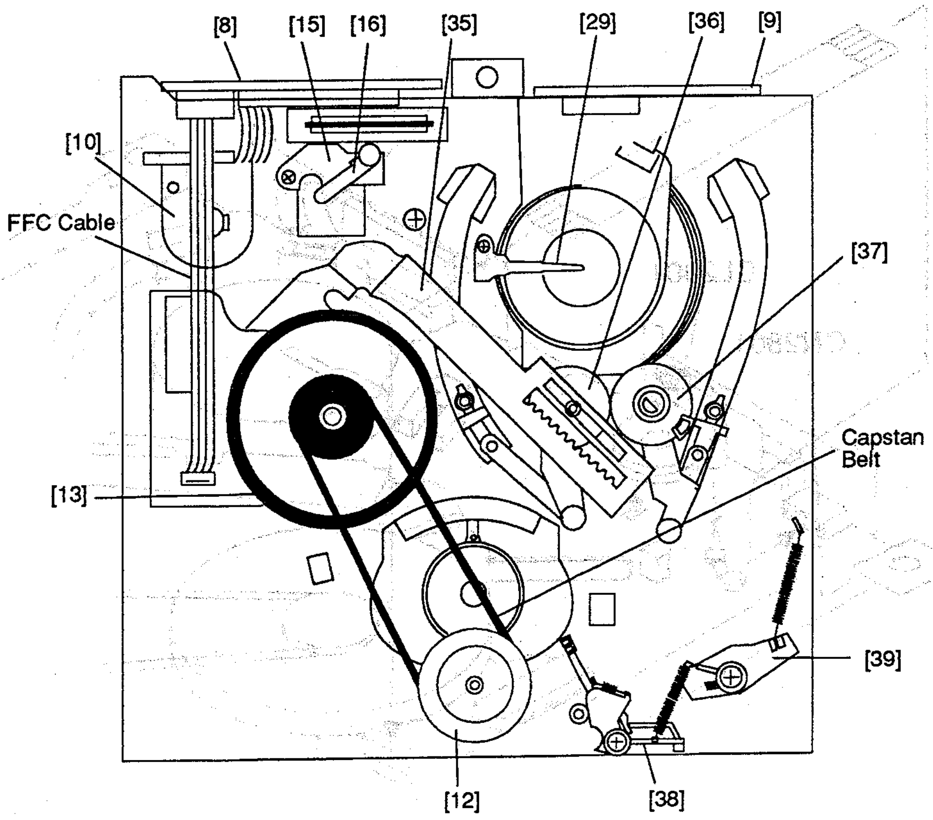
*[40] .......... For Head Cleaner models only



Top View

(C-4)
[40]
[30]
[9]
Adjust Nut
[20]
[7]
Loading Belt
[8]
[2]
Nylon Nut
[1]
[14]
[3]
[6]
[4]
[5]
Pinch Roller Spring
[33]
[32]
[31]
[34]
[21]
[22]
[23]
[28]
[19]
[18]
Main Lever Spring
[28]
[27]
Poly Slider Washer
[24]
[17]
[25]
[11]
[26]
Poly Slider Washer

Fig. DM1



Bottom View

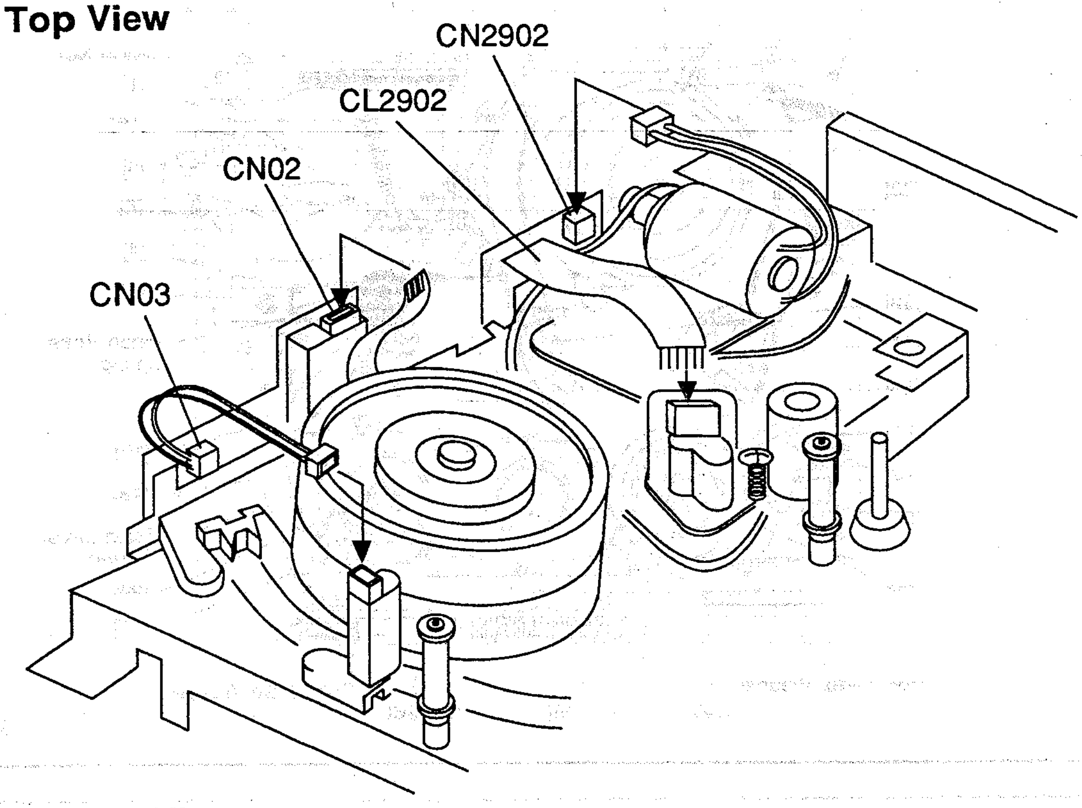
[8]
[15]
[16]
[35]
[29]
[36]
[9]
[10]
FFC Cable
[37]
Capstan Belt
[13]
[39]
[12]
[38]

Fig. DM2

## Deck Connectors

**Note:** Disconnect Connectors shown below before disassembling the Deck.

### Top View


CN2902
CL2902
CN02
CN03

### Bottom View

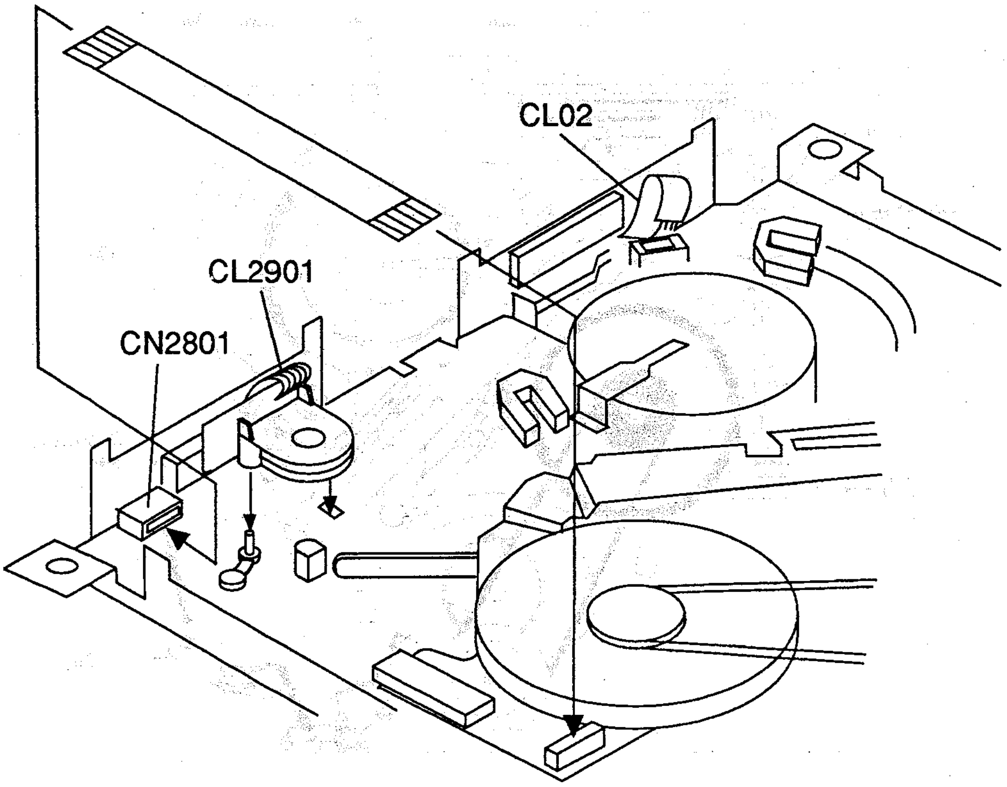
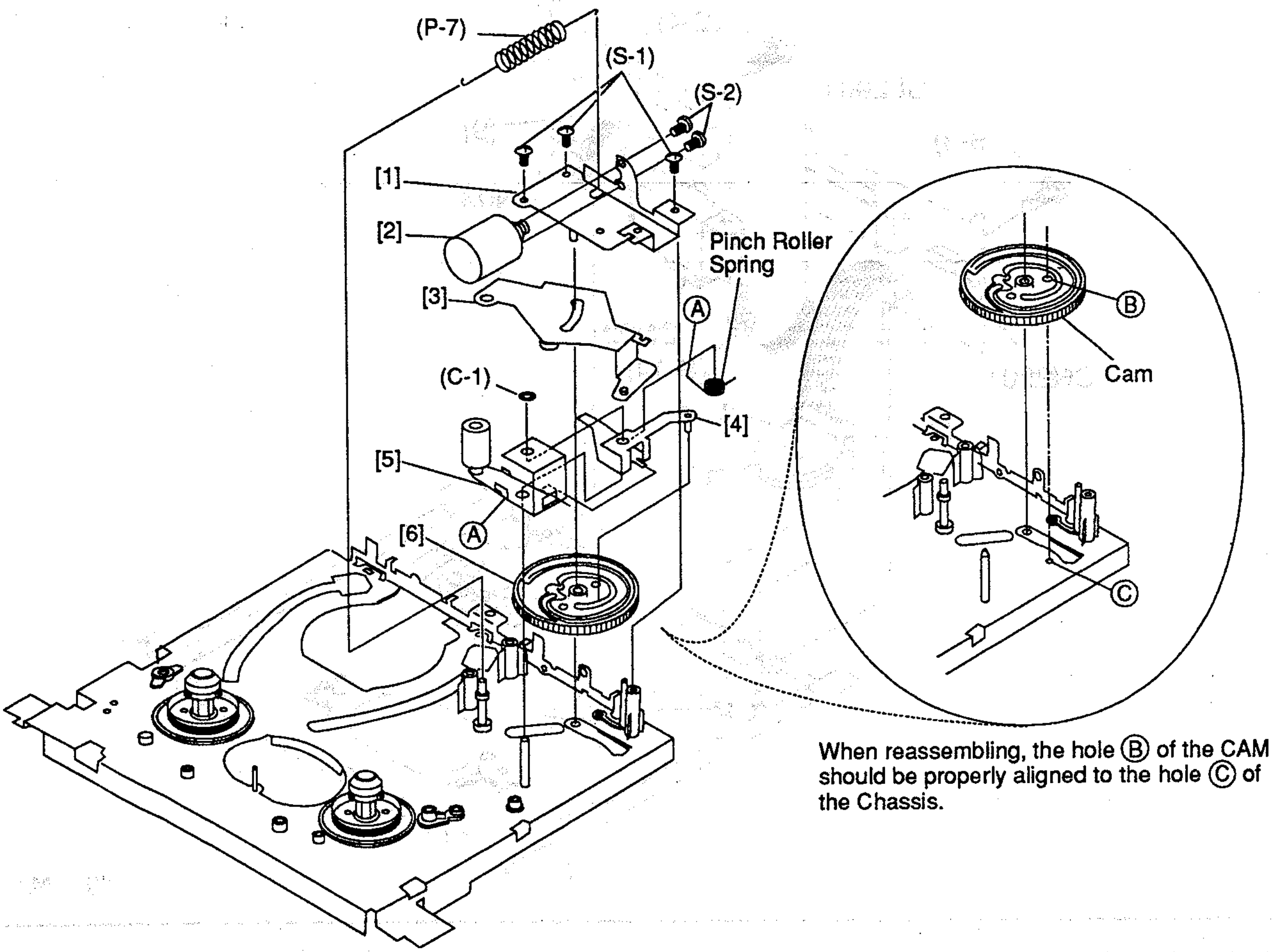

CL02
CL2901
CN2801

Fig. DM3


(P-7)
(S-1)
(S-2)
[1]
[2]
Pinch Roller Spring
[3]
Ⓐ
(C-1)
[4]
[5]
Ⓐ
[6]
Ⓑ
Cam
Ⓒ

When reassembling, the hole Ⓑ of the CAM should be properly aligned to the hole Ⓒ of the Chassis.

Fig. DM4

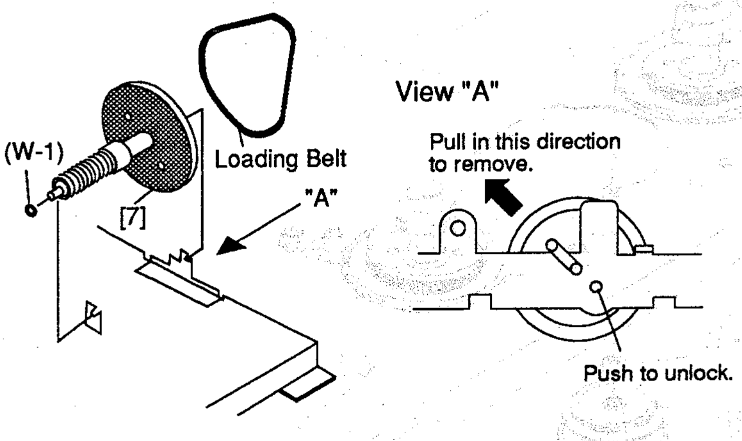

(W-1)
[7]
Loading Belt
"A"
View "A"
Pull in this direction to remove.
Push to unlock.

Fig. DM5

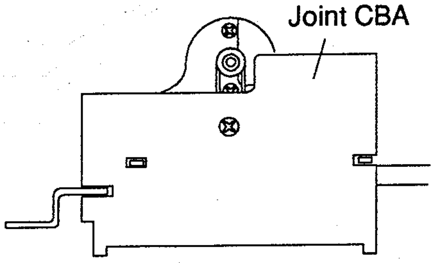


Fig. DM6

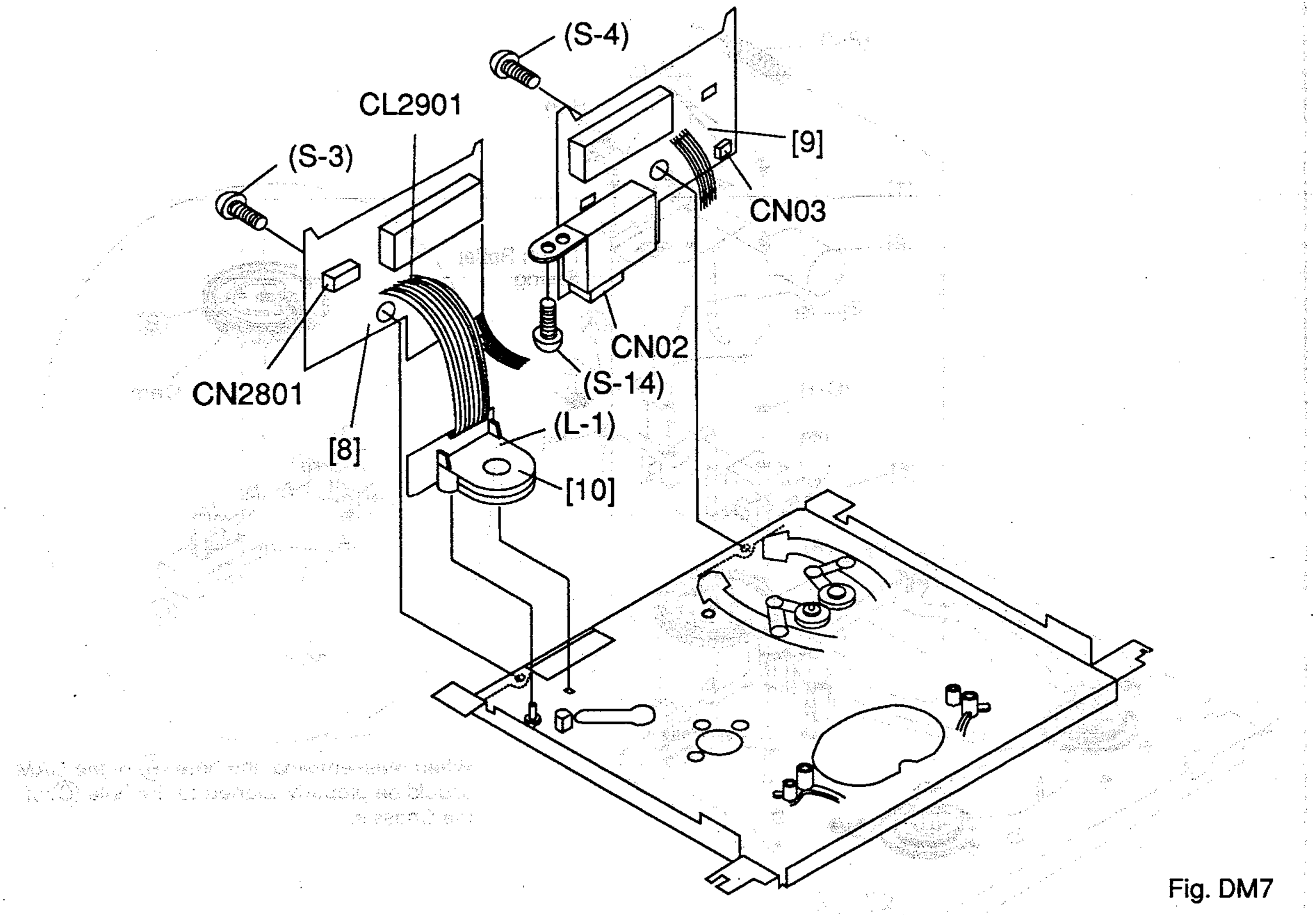

(S-4)
CL2901
(S-3)
[9]
CN03
CN02
(S-14)
CN2801
(L-1)
[8]
[10]

Fig. DM7

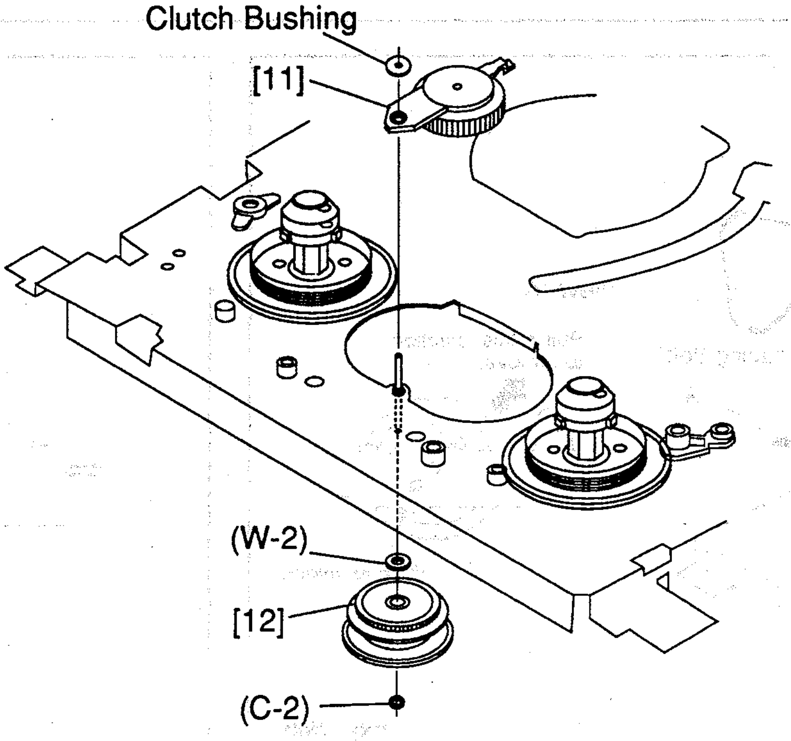

Clutch Bushing
[11]
(W-2)
[12]
(C-2)

Fig. DM8

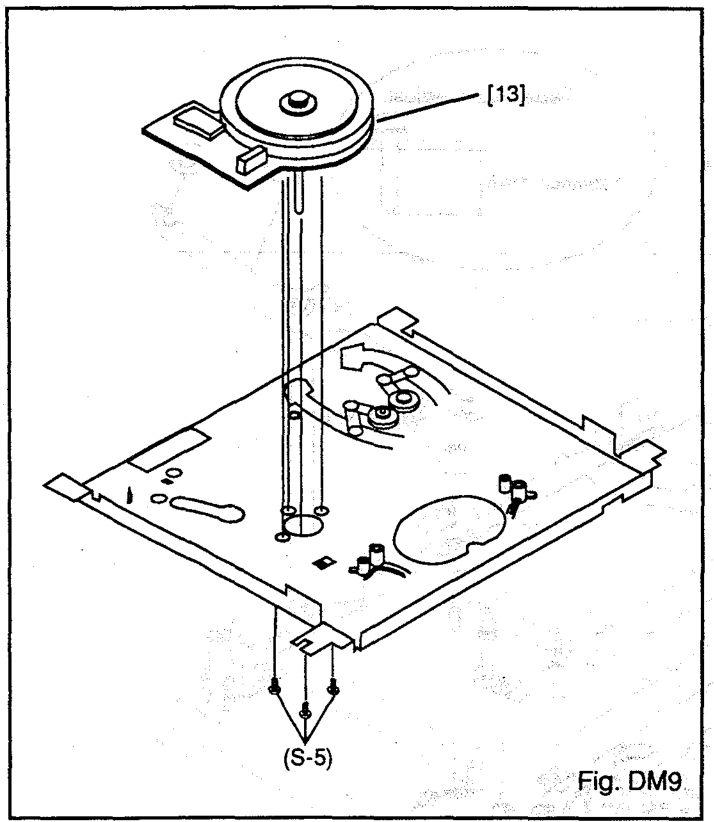


Fig. DM9

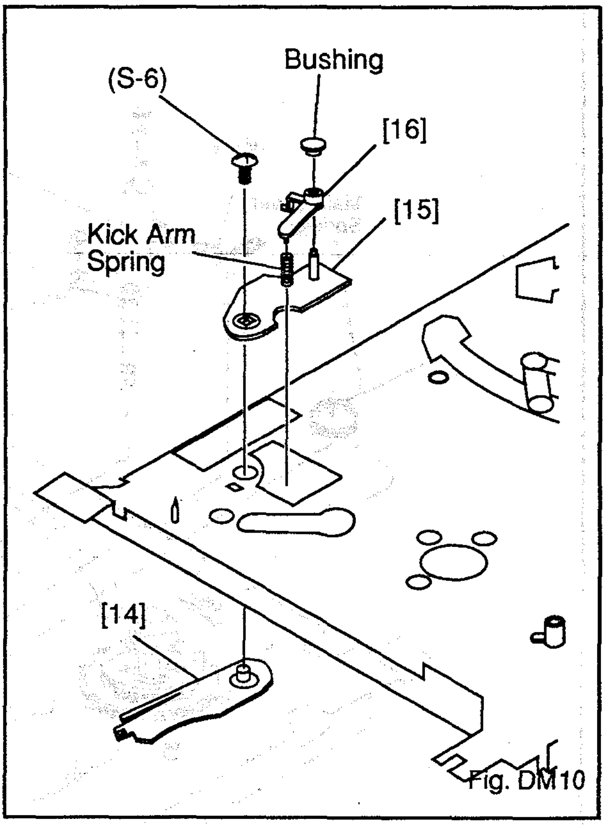

Bushing
(S-6)
[16]
[15]
Kick Arm Spring
[14]

Fig. DM10

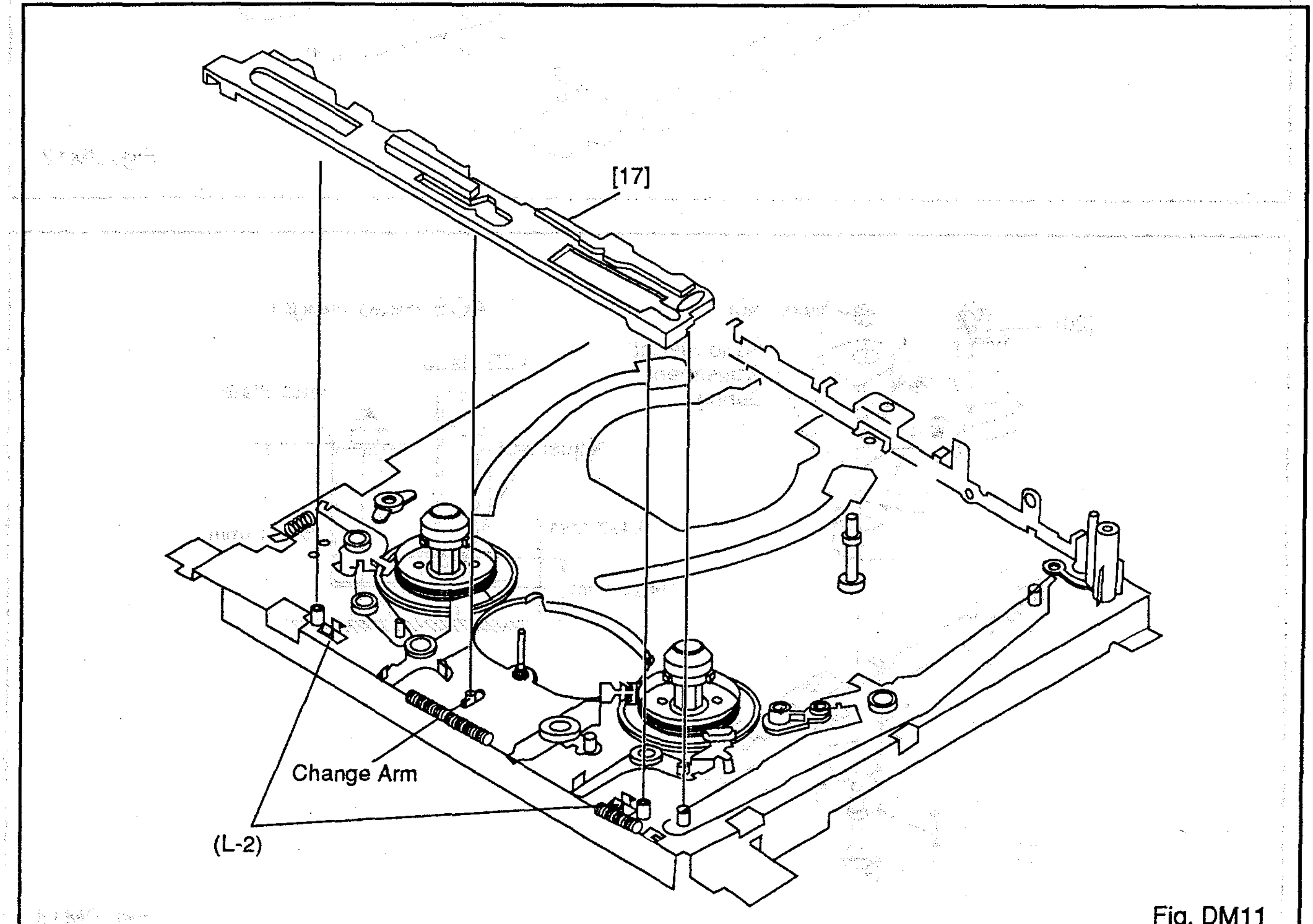

[17]
Change Arm
(L-2)

Fig. DM11

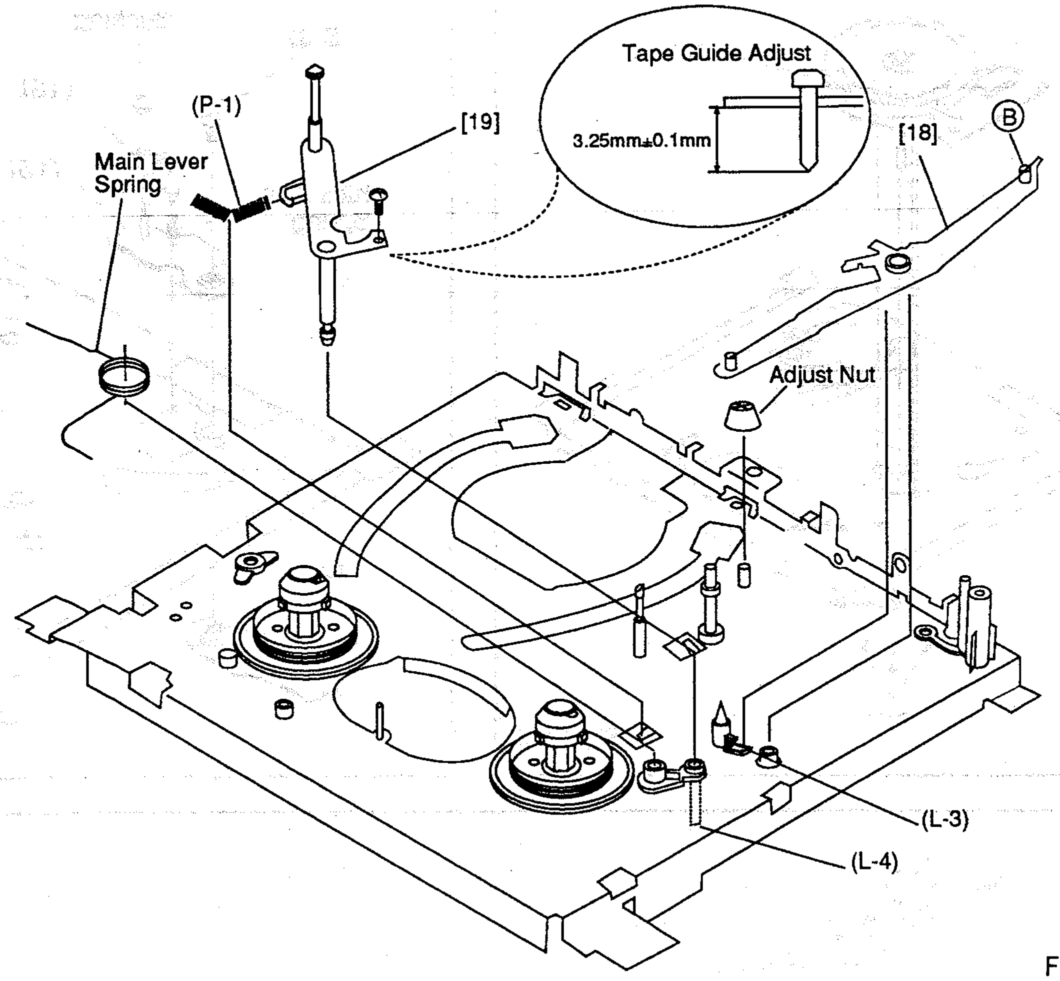

Tape Guide Adjust
3.25mm±0.1mm
(P-1)
[19]
Main Lever Spring
[18]
B
Adjust Nut
(L-3)
(L-4)

Fig. DM12

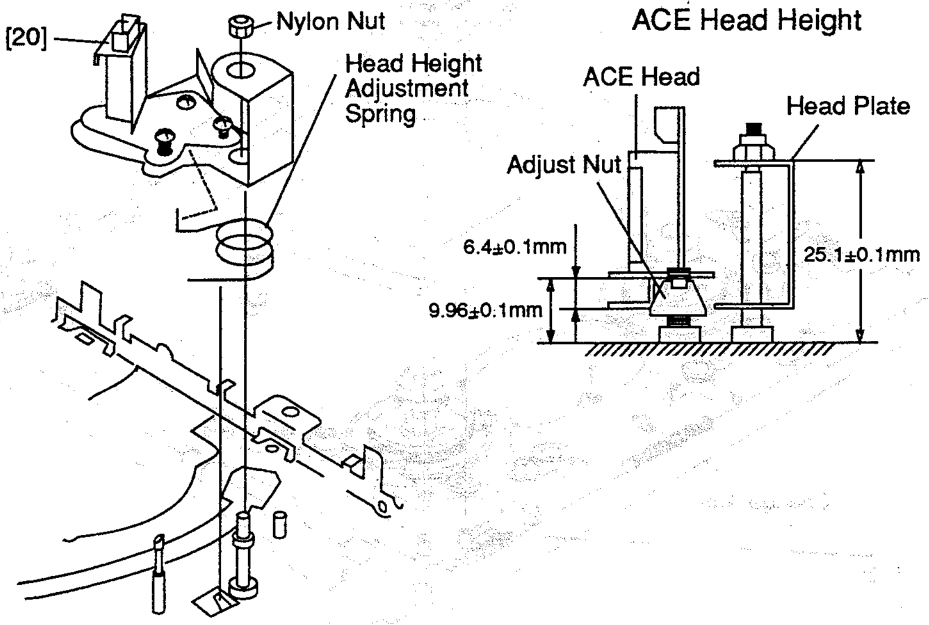

[20]
Nylon Nut
Head Height Adjustment Spring
ACE Head Height
ACE Head
Head Plate
Adjust Nut
6.4±0.1mm
9.96±0.1mm
25.1±0.1mm

Fig. DM13

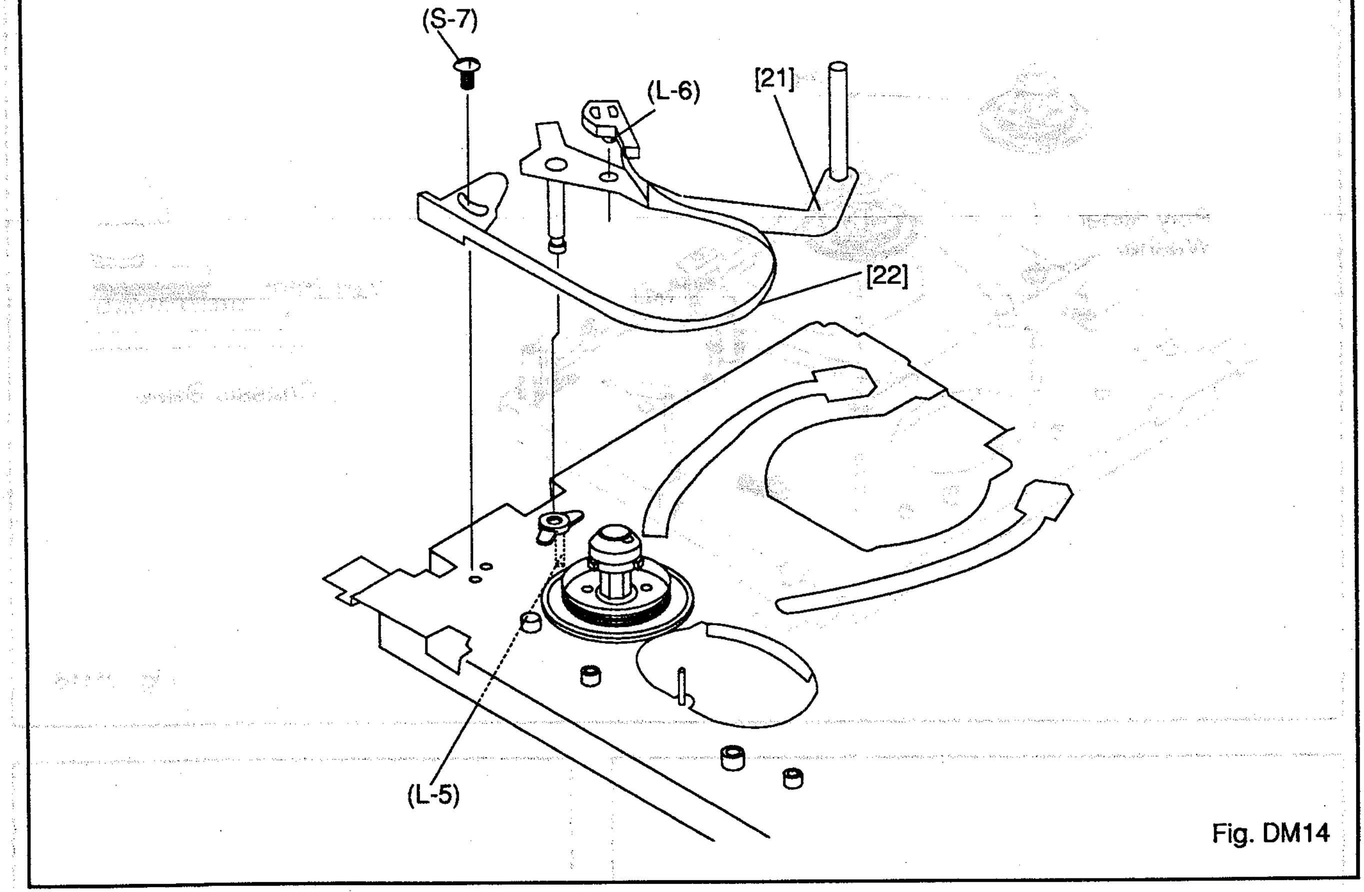

(S-7)
(L-6)
[21]
[22]
(L-5)

Fig. DM14

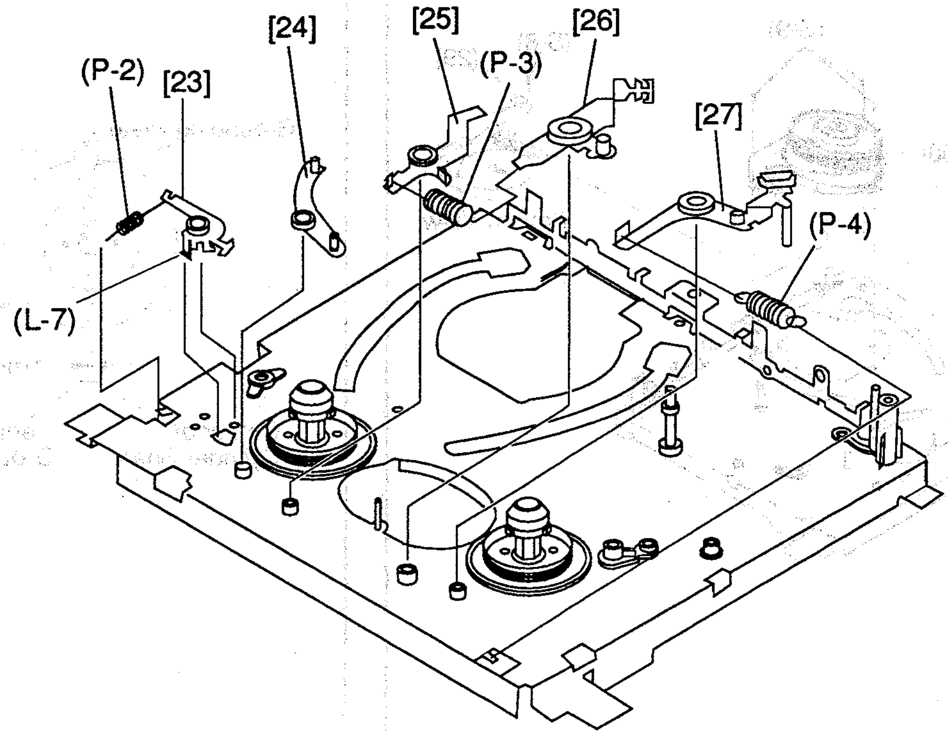

[24]
[25]
[26]
(P-2)
[23]
(P-3)
[27]
(P-4)
(L-7)

Fig. DM15

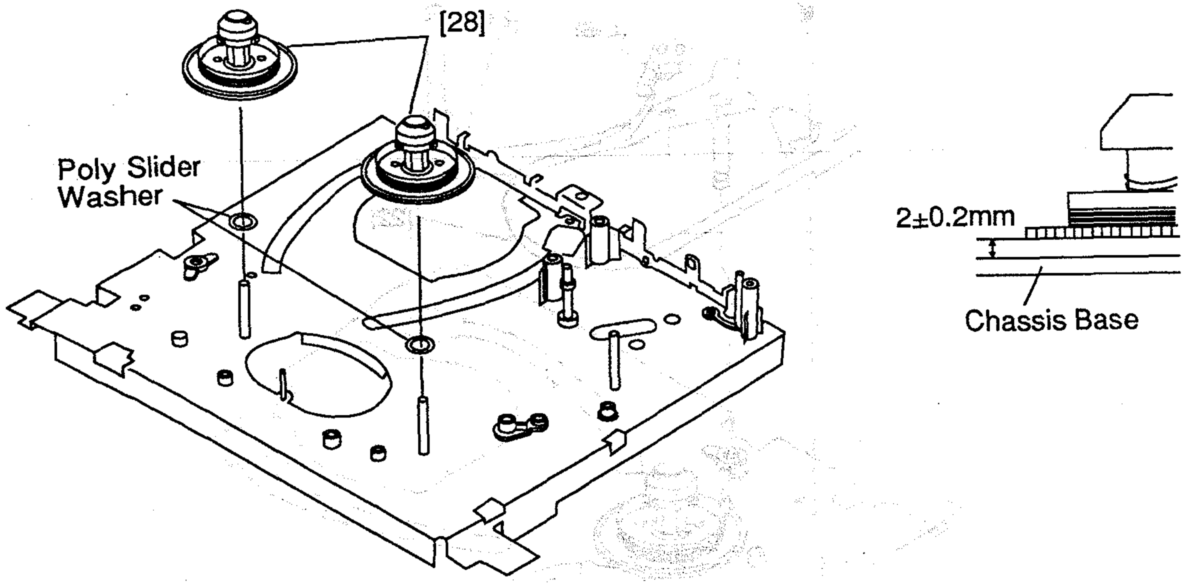

[28]
Poly Slider Washer
2±0.2mm
Chassis Base

Fig. DM16

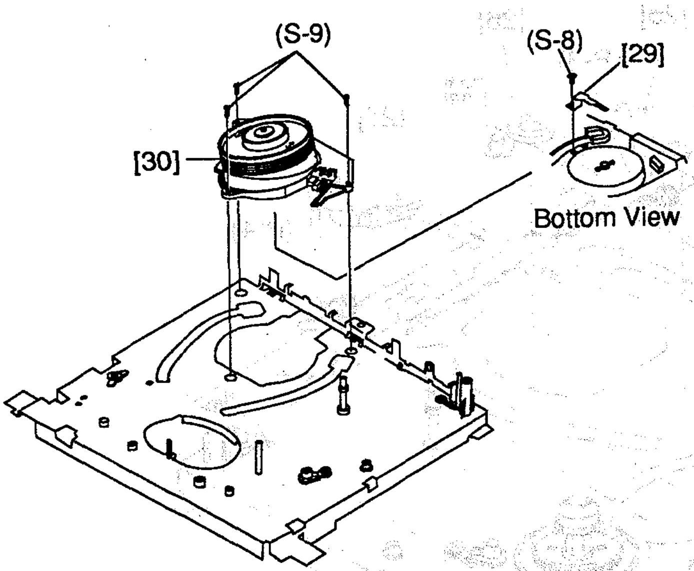

(S-9)
(S-8)
[29]
[30]
Bottom View

Fig. DM17

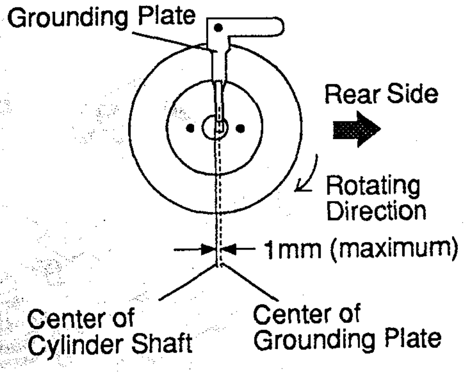

Grounding Plate
Rear Side
Rotating Direction
1mm (maximum)
Center of Cylinder Shaft
Center of Grounding Plate

Fig. DM18

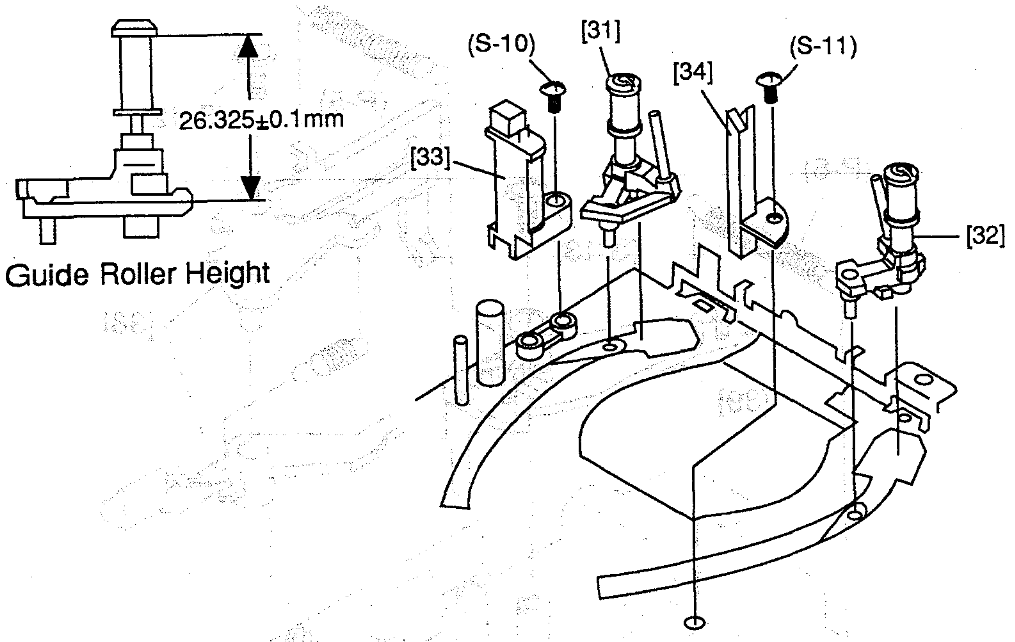

26.325±0.1mm
Guide Roller Height
(S-10)
[31]
[34]
(S-11)
[33]
[32]

Fig. DM19

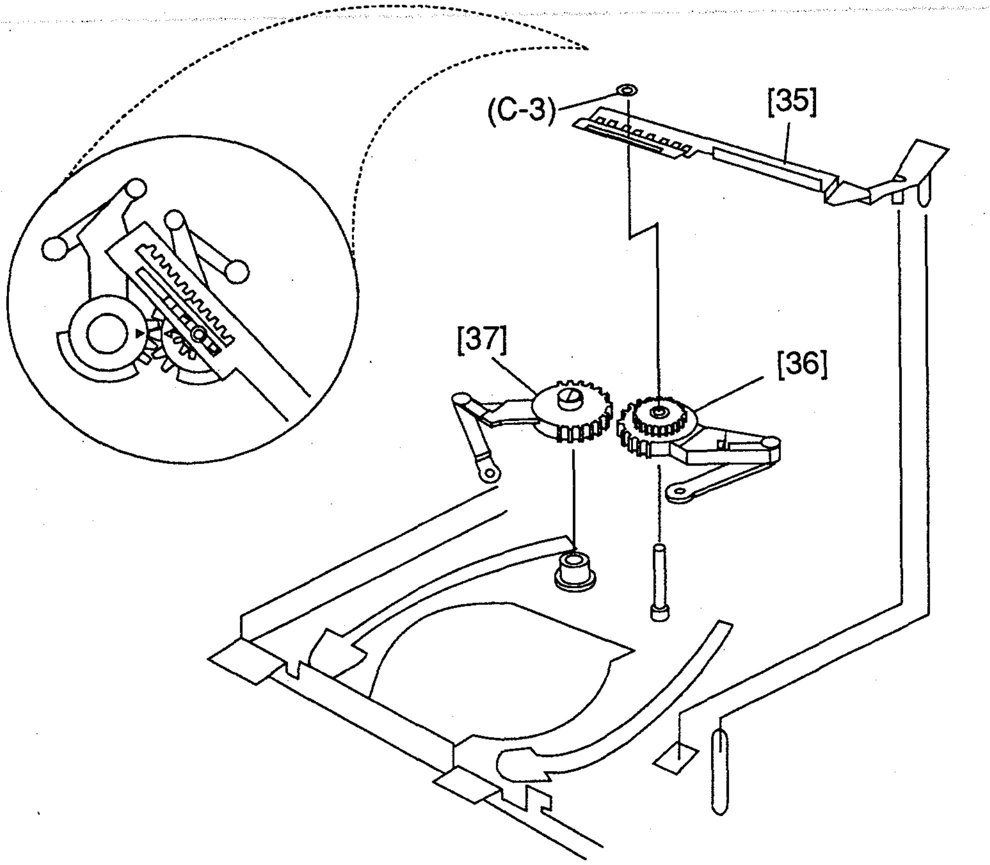


Fig. DM20

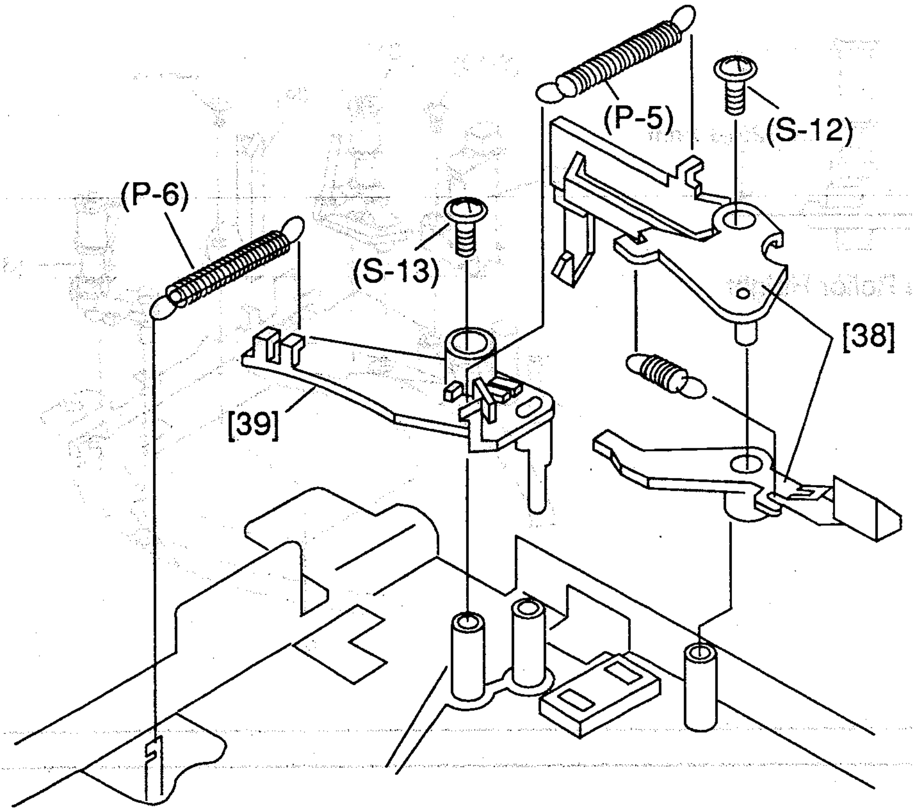

(P-5)
(S-12)
(P-6)
(S-13)
[38]
[39]

Fig. DM21

## Front Loading Assembly

This procedure starts with the condition that the Front Loading Assembly has been removed from the chassis. When reassembling, follow the steps in reverse order.

| STEP /LOC. No. | START-ING No. | PART | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|
| | | | | Fig. No. | REMOVE *UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER | ADJUSTMENT CONDITION |
| [1] | [1] | Drive Gear Reinforcement | R | DM22 | (S-1) | |
| [2] | [1] | Cassette Drive Gear (R) | R | DM22 | *(L-1) | Refer to the setting condition in Fig. DM22. |
| [3] | [3] | Prism (R) | R | DM22 | *2(L-2) | |
| [4] | [4] | Door Opener | R | DM22 | Door Opener Spring | When installing the Door Opener Spring, refer to the setting condition in Fig. DM22. |
| [5] | [1] | Rack Assembly | R | DM22 | | |
| [6] | [6] | Cassette Drive Gear (L) | L | DM23 | *(L-3) | When installing, refer to the setting condition in Fig. DM23. |
| [7] | [7] | Prism (L) | L | DM23 | *2(L-4) | |
| [8] | [8] | Cassette Holder Plate | T | DM24 | *2(L-5) | |

① ② ③ ④ ⑤ ⑥ ⑦

1. Order of steps in Procedure. When reassembling, follow the steps in reverse order. These numbers are also used as the identification (Location) No. of parts in Figures.
2. The start No. followed by corresponding part to be removed at this stage. For example, Prism (R) [3] can be removed without removing any other parts. But Cassette Drive Gear (R) [2] can be removed only after removing Drive Gear Reinforcement [1].
3. Parts to be removed or installed.
4. Location of part
   T=Top B=Bottom R=Right L=Left
5. Fig. No. shows Procedure or Part Location
6. Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
   P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
   2(C-2) = 2 Cut Washer(C-2), 2(L-2) = 2 Locking Clips(L-2), (N-1) = 1 Locking Pin(N-1)
7. Adjustment Information for Installation
   (+): Refer to Deck Exploded Views for lubrication information.

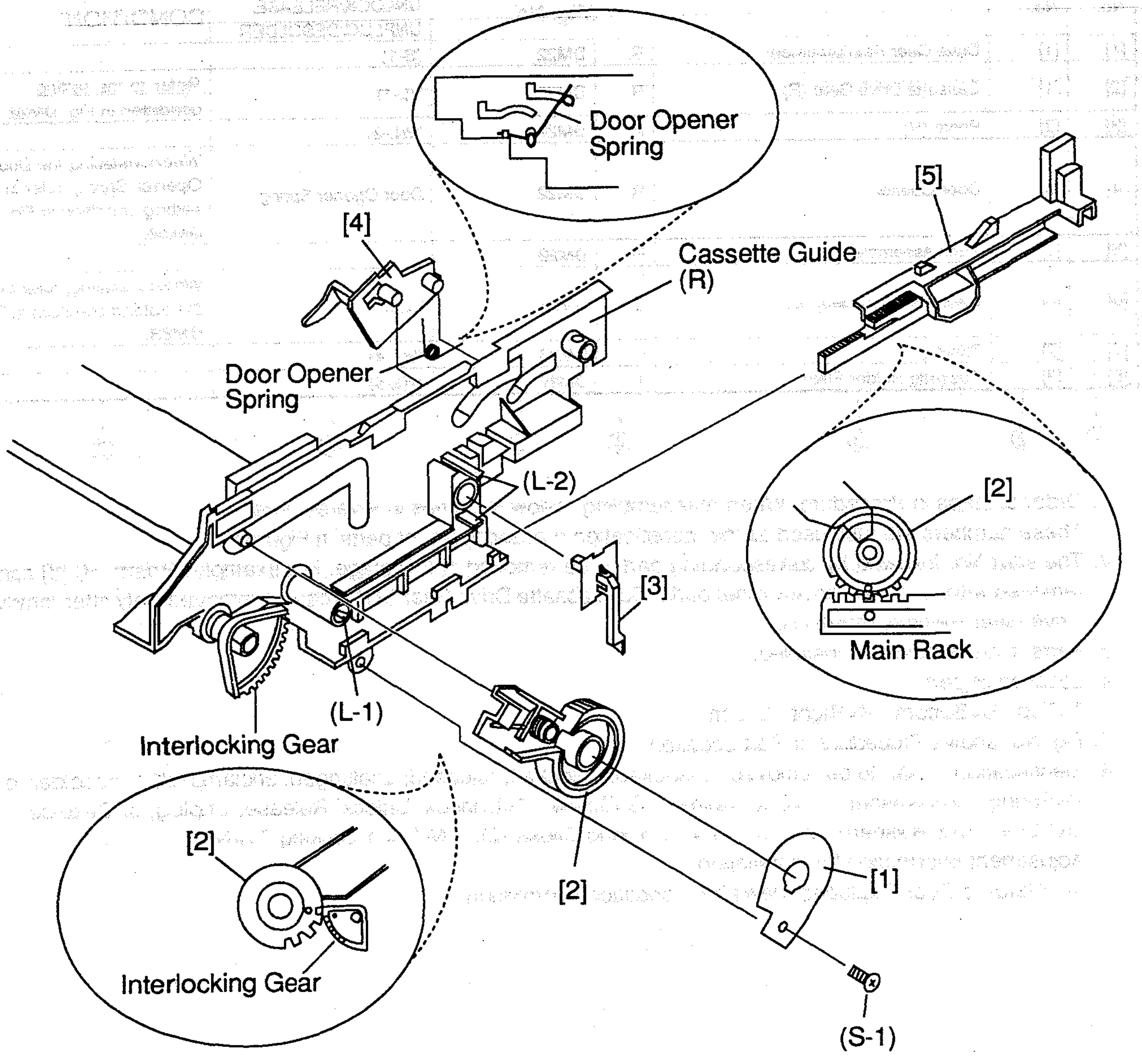

Door Opener Spring
[5]
[4]
Cassette Guide (R)
Door Opener Spring
(L-2)
[2]
[3]
Main Rack
Interlocking Gear
(L-1)
[2]
[2]
[1]
Interlocking Gear
(S-1)

Fig. DM22

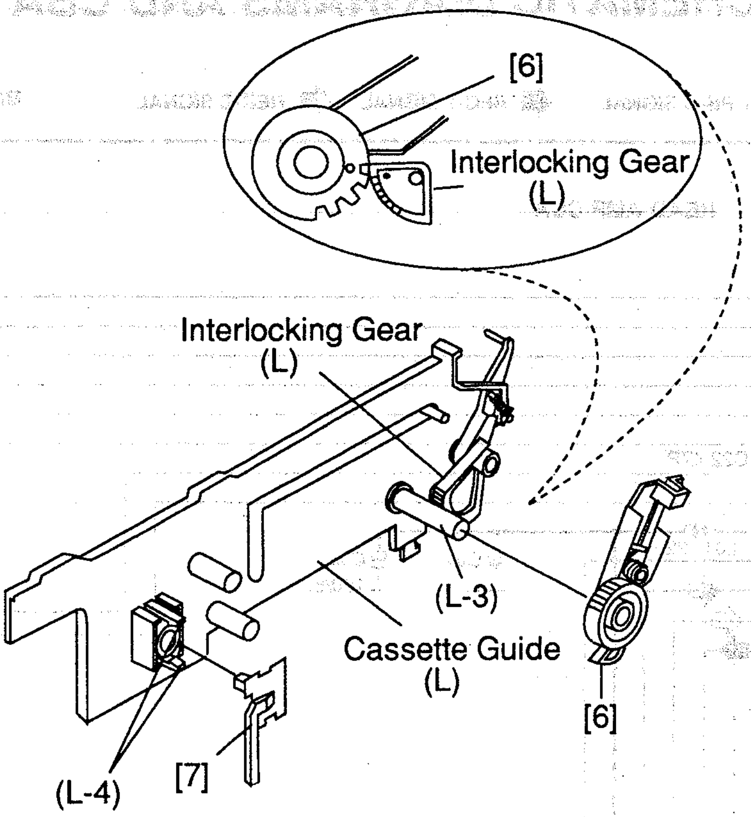

[6]
Interlocking Gear
(L)
Interlocking Gear
(L)
(L-3)
Cassette Guide
(L)
[6]
(L-4)
[7]

Fig. DM23

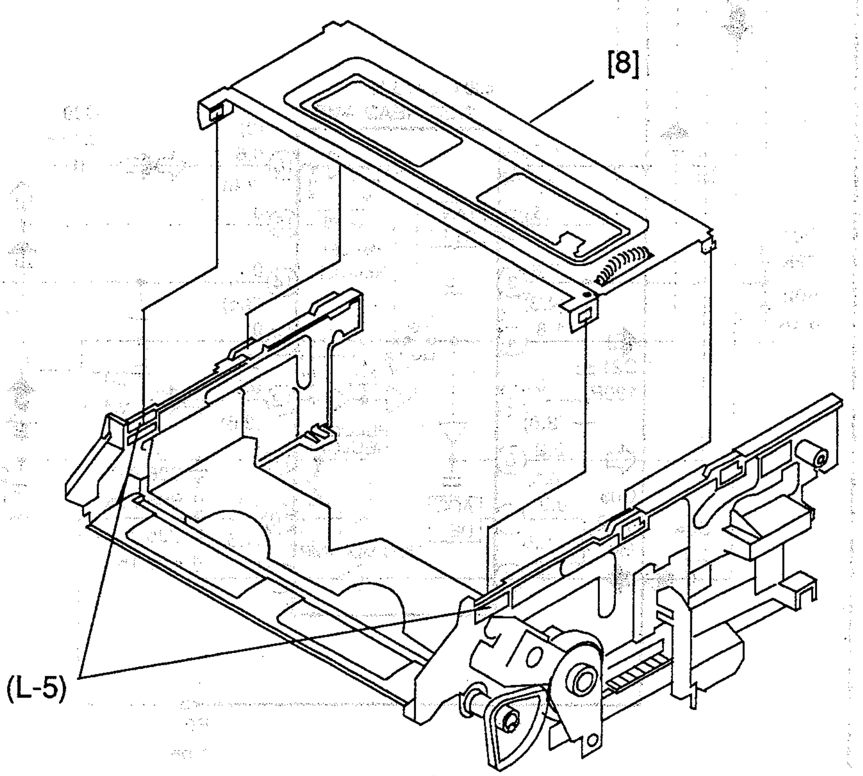


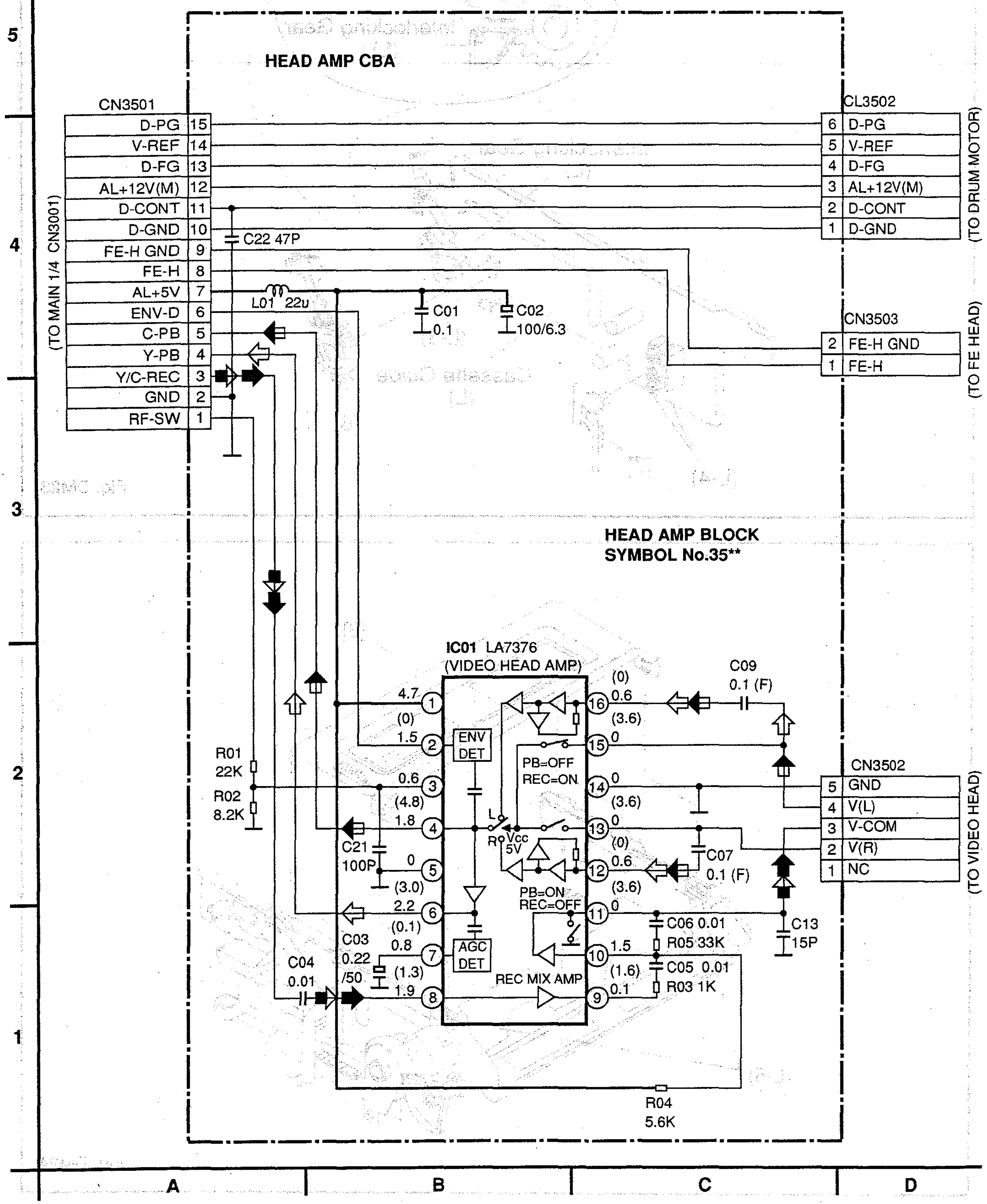
Fig. DM24

# SCHEMATIC DIAGRAMS AND CBA'S

## Head Amp

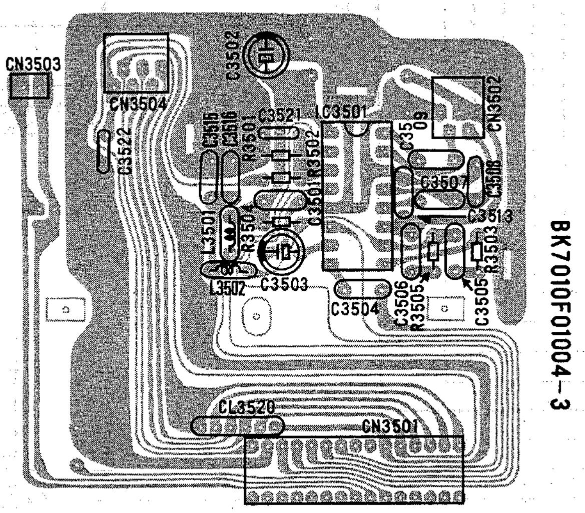
⇦ PB-Y SIGNAL ⇦ PB-C SIGNAL ⬅ REC-Y SIGNAL ⇦ REC-C SIGNAL

Mode : SP/REC



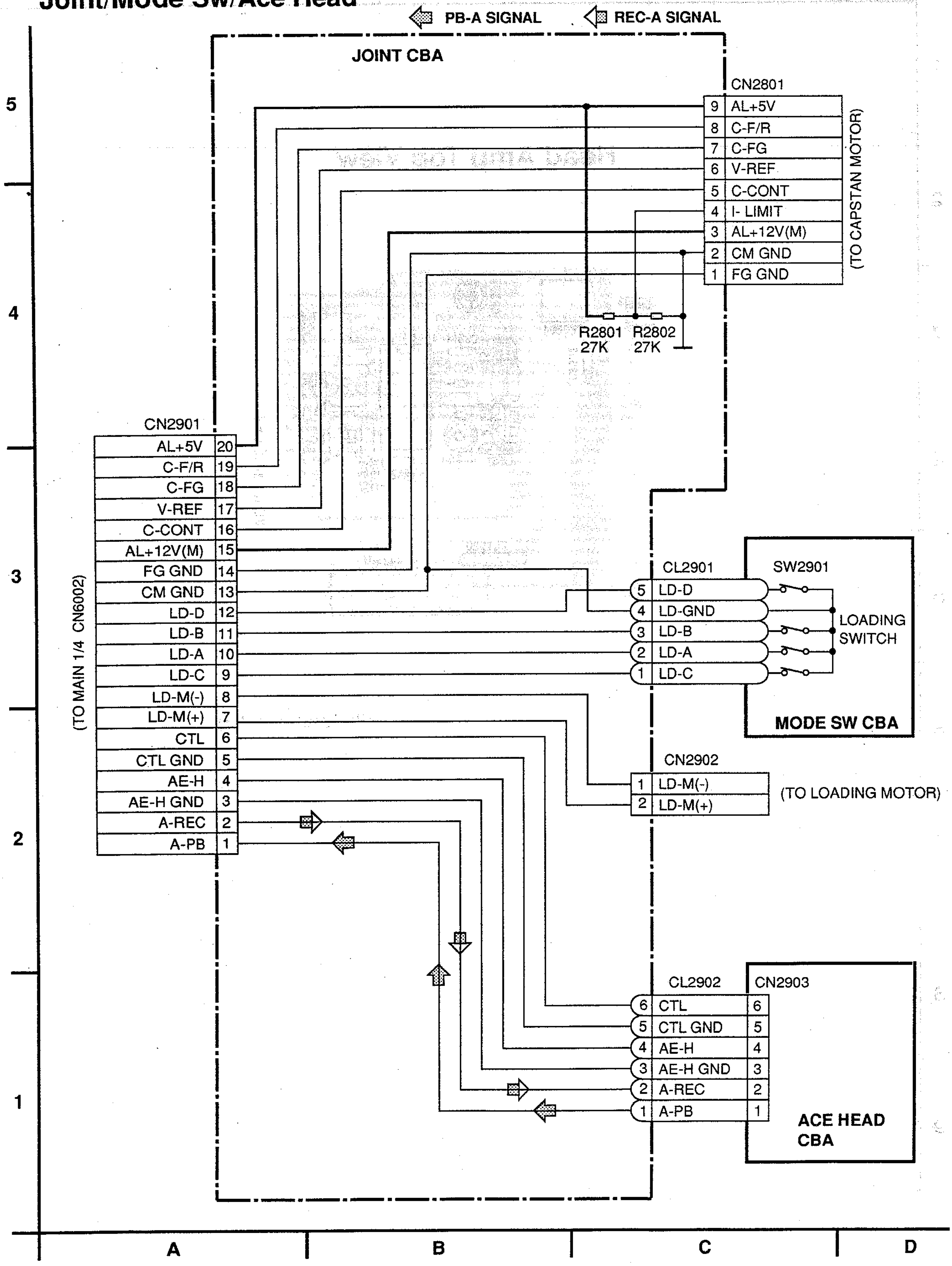
5
4
3
2
1
A
B
C
D
HEAD AMP CBA
CN3501
15 D-PG
14 V-REF
13 D-FG
12 AL+12V(M)
11 D-CONT
10 D-GND
9 FE-H GND
8 FE-H
7 AL+5V
6 ENV-D
5 C-PB
4 Y-PB
3 Y/C-REC
2 GND
1 RF-SW
(TO MAIN 1/4 CN3001)
C22 47P
L01 22u
C01 0.1
C02 100/6.3
CL3502
6 D-PG
5 V-REF
4 D-FG
3 AL+12V(M)
2 D-CONT
1 D-GND
(TO DRUM MOTOR)
CN3503
2 FE-H GND
1 FE-H
(TO FE HEAD)
HEAD AMP BLOCK
SYMBOL No.35**
IC01 LA7376
(VIDEO HEAD AMP)
4.7
(0)
1.5
0.6
(4.8)
1.8
0
(3.0)
2.2
(0.1)
0.8
(1.3)
1.9
ENV DET
AGC DET
PB=OFF
REC=ON
L
R
Vcc 5V
PB=ON
REC=OFF
REC MIX AMP
(0)
0.6
(3.6)
0
0
(3.6)
0
(0)
0.6
(3.6)
0
1.5
(1.6)
0.1
C09
0.1 (F)
C07
0.1 (F)
C06 0.01
R05 33K
C05 0.01
R03 1K
C13
15P
R04
5.6K
R01
22K
R02
8.2K
C21
100P
C03
0.22
/50
C04
0.01
CN3502
5 GND
4 V(L)
3 V-COM
2 V(R)
1 NC
(TO VIDEO HEAD)

# Head Amp Top View

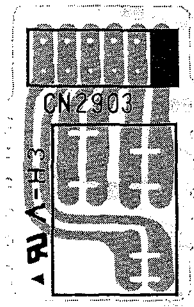

A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
CN3503
CN3504
C3502
C3522
C3515
C3516
R3501
C3521
IC3501
R3502
C3501
C35
09
CN3502
C3507
C3508
C3513
L3501
R3504
L3502
C3503
C3504
C3506
R3505
R3503
C3505
CL3520
CN3501
BK7010F01004-3

(BK7010F01004-3)

## Joint/Mode Sw/Ace Head

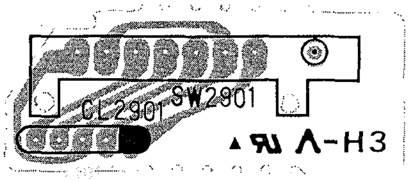

PB-A SIGNAL
REC-A SIGNAL
JOINT CBA
CN2801
9 AL+5V
8 C-F/R
7 C-FG
6 V-REF
5 C-CONT
4 I- LIMIT
3 AL+12V(M)
2 CM GND
1 FG GND
(TO CAPSTAN MOTOR)
R2801 27K
R2802 27K
CN2901
AL+5V 20
C-F/R 19
C-FG 18
V-REF 17
C-CONT 16
AL+12V(M) 15
FG GND 14
CM GND 13
LD-D 12
LD-B 11
LD-A 10
LD-C 9
LD-M(-) 8
LD-M(+) 7
CTL 6
CTL GND 5
AE-H 4
AE-H GND 3
A-REC 2
A-PB 1
(TO MAIN 1/4 CN6002)
CL2901
5 LD-D
4 LD-GND
3 LD-B
2 LD-A
1 LD-C
SW2901
LOADING SWITCH
MODE SW CBA
CN2902
1 LD-M(-)
2 LD-M(+)
(TO LOADING MOTOR)
CL2902
CN2903
6 CTL 6
5 CTL GND 5
4 AE-H 4
3 AE-H GND 3
2 A-REC 2
1 A-PB 1
ACE HEAD CBA
5
4
3
2
1
A
B
C
D

## ACE Head Top View



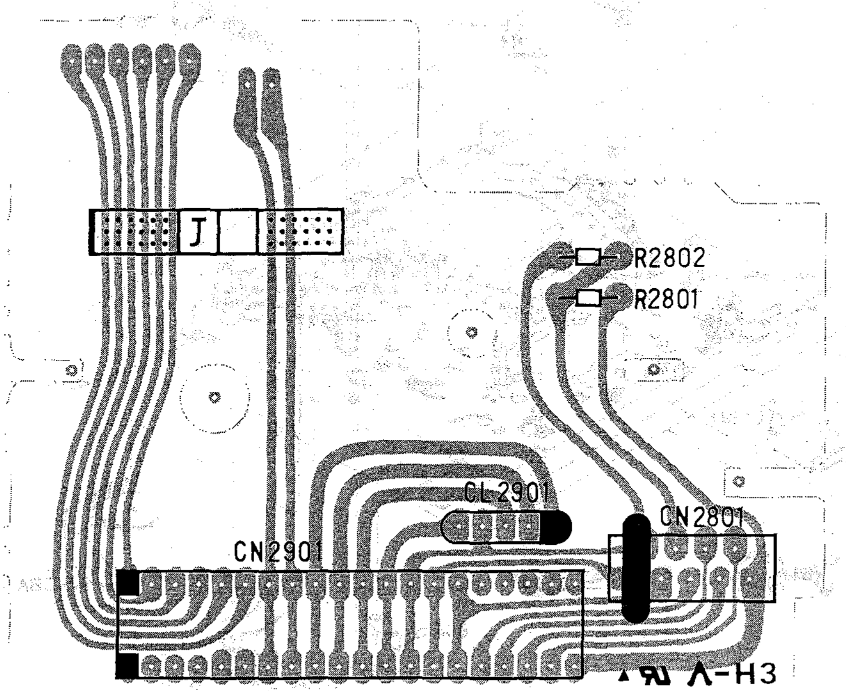
(BK7010F01004-C)

## Mode SW Top View


CL2901
SW2901
▲ Λ-H3

(BK7010F01002-B)

## Joint Top View

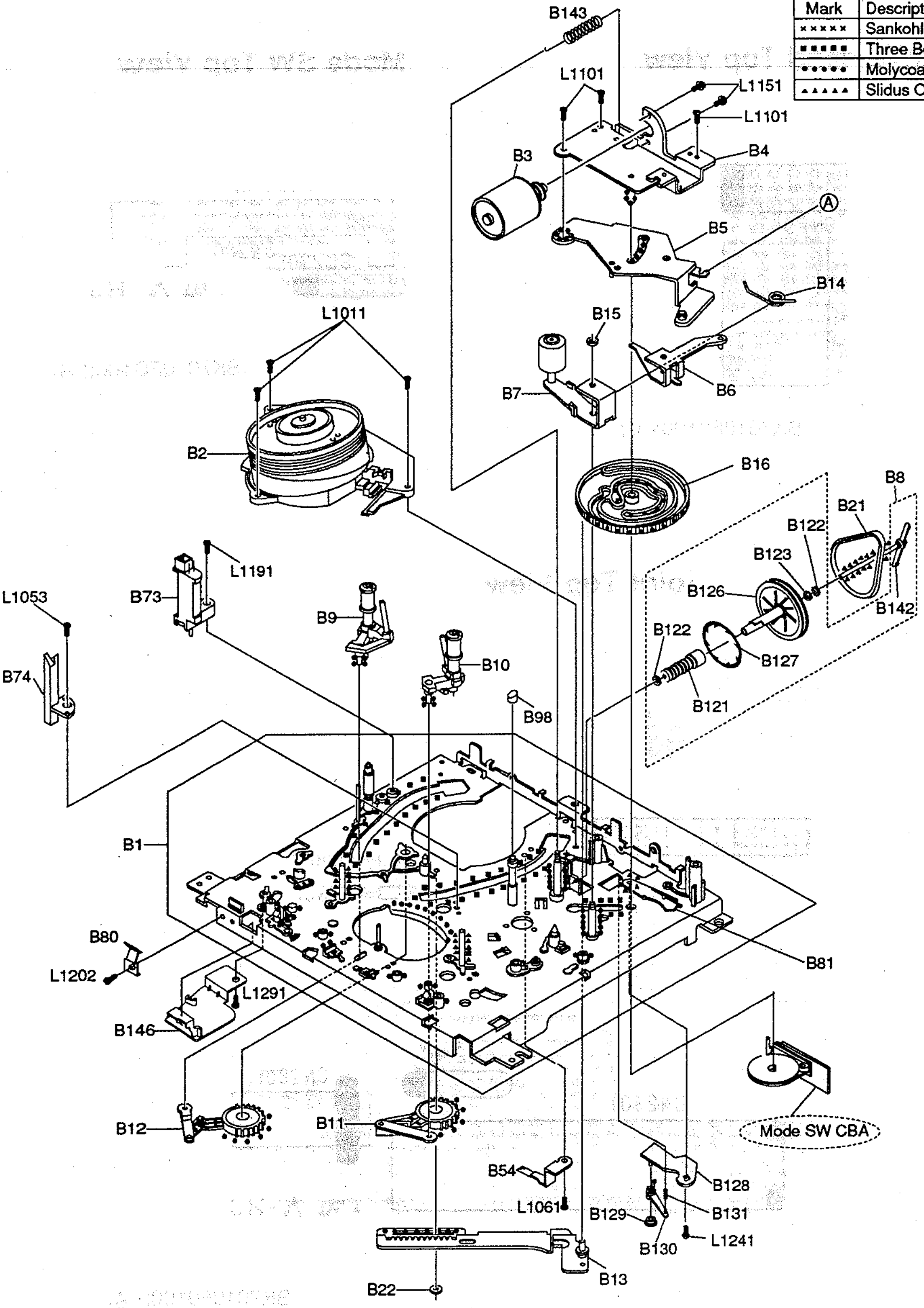

J
R2802
R2801
CL2901
CN2801
CN2901
▲ Λ-H3

(BK7010F01002-A)

# DECK EXPLODED VIEWS

## View 1

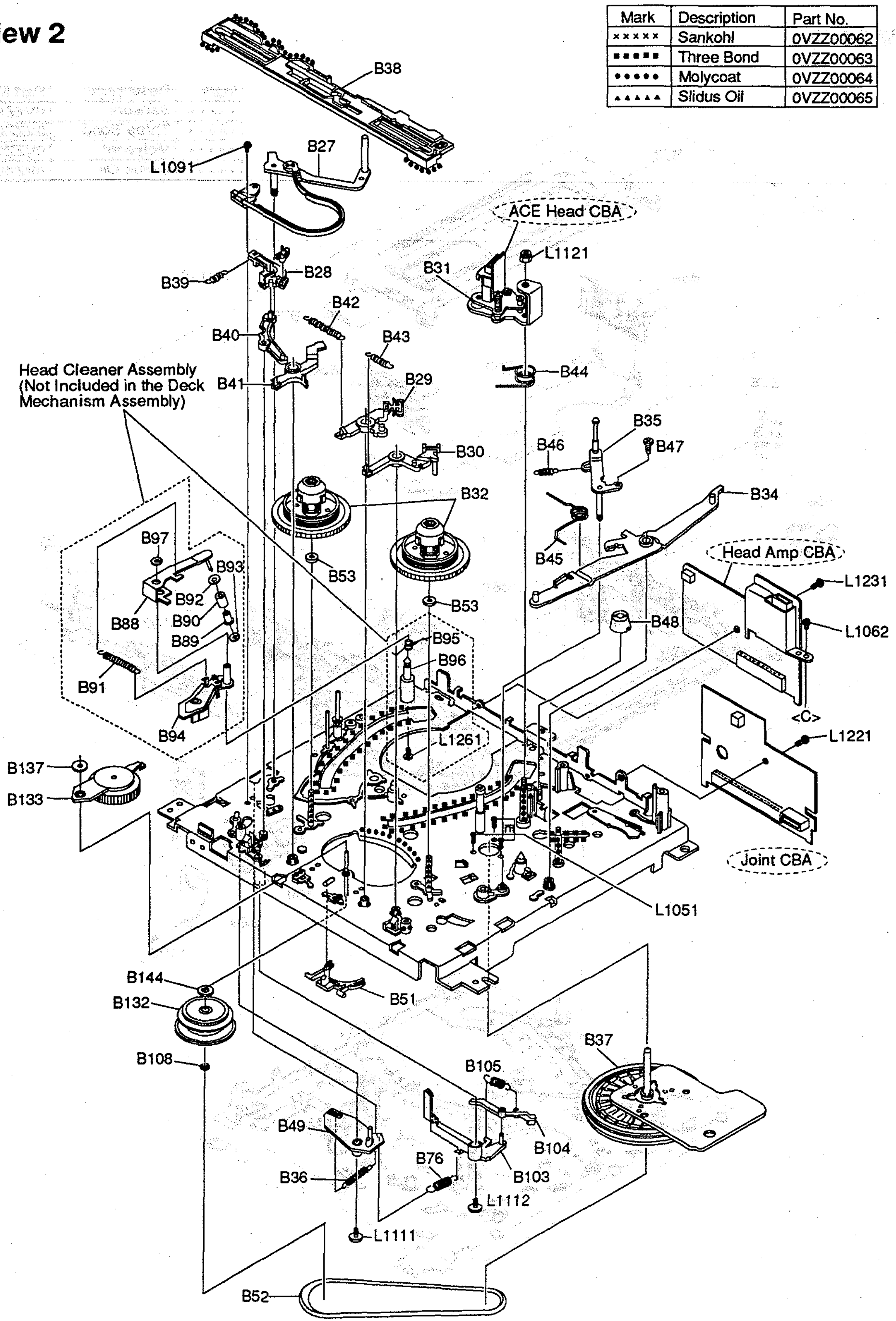
| Mark | Description | Part No. |
|---|---|---|
| ××××× | Sankohl | 0VZZ00062 |
| ■■■■■ | Three Bond | 0VZZ00063 |
| ••••• | Molycoat | 0VZZ00064 |
| ▲▲▲▲▲ | Slidus Oil | 0VZZ00065 |


B143
L1101
L1151
L1101
B3
B4
Ⓐ
B5
B14
L1011
B15
B7
B6
B2
B16
B8
B21
B122
B123
B126
B142
L1191
L1053
B73
B9
B10
B122
B127
B121
B74
B98
B1
B81
B80
L1202
L1291
B146
Mode SW CBA
B12
B11
B54
L1061
B129
B128
B131
L1241
B130
B13
B22

See the Deck Electrical Parts List.

## View 2

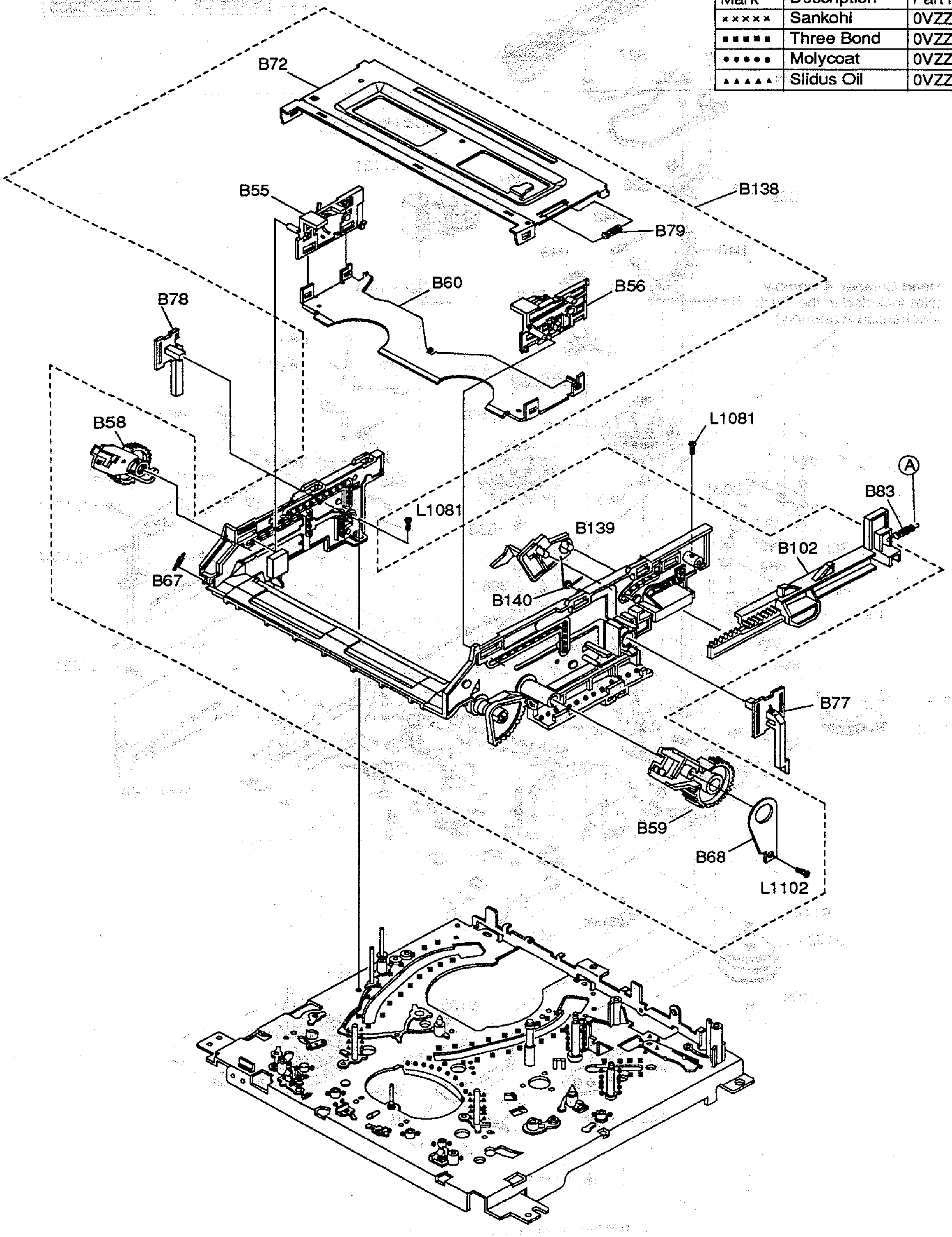
| Mark | Description | Part No. |
|---|---|---|
| ××××× | Sankohl | 0VZZ00062 |
| ■■■■■ | Three Bond | 0VZZ00063 |
| ●●●●● | Molycoat | 0VZZ00064 |
| ▲▲▲▲▲ | Slidus Oil | 0VZZ00065 |


B38
L1091
B27
ACE Head CBA
L1121
B31
B39
B28
B42
B40
B43
Head Cleaner Assembly
(Not Included in the Deck
Mechanism Assembly)
B41
B29
B44
B35
B46
B47
B30
B32
B34
B97
B93
B53
B45
Head Amp CBA
L1231
B92
B88
B90
B89
B53
B48
L1062
B95
B96
B91
B94
L1261
<C>
L1221
B137
B133
Joint CBA
L1051
B144
B132
B51
B37
B108
B105
B49
B104
B76
B36
B103
L1112
L1111
B52

See the Deck Electrical Parts List.

## View 3

| Mark | Description | Part No. |
|---|---|---|
| ××××× | Sankohl | 0VZZ00062 |
| ■■■■■ | Three Bond | 0VZZ00063 |
| ●●●●● | Molycoat | 0VZZ00064 |
| ▲▲▲▲▲ | Slidus Oil | 0VZZ00065 |


B72
B138
B55
B79
B60
B56
B78
B58
L1081
L1081
Ⓐ
B83
B139
B102
B67
B140
B77
B59
B68
L1102

# DECK MECHANICAL PARTS LIST

| Ref. No. | Description | Part No. |
|---|---|---|
| B 1 | CHASSIS ASSEMBLY | 0VSA05627 |
| B 2 | CYLINDER ASSEMBLY | 0VM301796 |
|  | CYLINDER ASSEMBLY | 0VM201335 |
| B 3 | LDG MOTOR PREPARATION | 0VSA04781 |
| B 4 | MOTOR HOLDER CALKING ASSEMBLY | 0VM403364 |
| B 5 | CASSETTE DRIVE LEVER ASSEMBLY | 0VM403507I |
| B 6 | PINCH ROLLER ARM ASSEMBLY | 0VSA05848 |
| B 7 | PINCH ARM ASSEMBLY or | 0VM402387 |
|  | PINCH ARM ASSEMBLY or | 0VSA05924 |
|  | PINCH ARM ASSEMBLY | 0VM402393 |
| B 8 | PULLEY ASSEMBLY | 0VSA05505 |
| B 9 | MOVING GUIDE S ASSEMBLY | 0VSA05722 |
| B 10 | MOVING GUIDE T ASSEMBLY | 0VSA05723 |
| B 11 | LOADING ARM T ASSEMBLY | 0VSA05503 |
| B 12 | LOADING ARM B ASSEMBLY | 0VSA04215 |
| B 13 | LOADING ARM M ASSEMBLY | 0VM404693 |
| B 14 | PINCH ROLLER SP | 0VM403949 |
| B 15 | LUMIRROR WASHER 3.1X6X0.35 | 0VM403269 |
| B 16 | CAM | 0VM100453 |
| B 21 | LDG BELT or | 0VM403432 |
|  | BELT LDG | 0VM403952 |
| B 22 | P.S.W(CUT) | 0VM404679 |
| B 27 | BAND BRAKE ASSEMBLY | 0VSA04658 |
| B 28 | MAIN BRAKE S ASSEMBLY | 0VSA04212 |
| B 29 | MAIN BRAKE T ASSEMBLY | 0VSA04213 |
| B 30 | T BRAKE ARM ASSEMBLY | 0VSA04641 |
| B 31 | AC HEAD ASSEMBLY | 0VSA04756 |
| B 32 | REEL BASE ASSEMBLY | 0VSA04759 |
| B 34 | MAIN LEVER ASSEMBLY | 0VM402558 |
| B 35 | TAPE GUIDE ASSEMBLY | 0VM402560 |
| B 36 | TENSION LEVER SP ASSEMBLY | 0VSA04550 |
| B 37 | CAPSTAN MOTOR F2QKB92 | MMDDB5ZSJ002 |
| B 38 | MODE CHANGE LEVER | 0VM201234G |
| B 39 | M BRAKE(S)SPRING | 0VM402579 |
| B 40 | M BRAKE(S)LEVER | 0VM300753 |
| B 41 | S BREAKE ARM | 0VM301759 |
| B 42 | M BRAKE T ARM SPRING | 0VM402582 |
| B 43 | T BRAKE SPRING | 0VM402580 |
| B 44 | HEAD ADJUST SPRING | 0VM402567A |
| B 45 | M LEVER SPRING | 0VM402570 |
| B 46 | TAPE GUIDE ARM SPRING | 0VM402581 |
| B 47 | TAPE GUIDE ARM ADJUST SCREW | 0VM403242 |
| B 48 | ADJUST NUT (B) | 0VM404678A |
| B 49 | BT DRIVE ARM | 0VM300756K |
| B 51 | CHANGE ARM | 0VM402441E |
| B 52 | BELT FWD or | 0VM402397 |
|  | BELT FWD | 0VM403950 |
| B 53 | P.S.W B | 0VM402625 |
| B 54 | GROUND BRUSH ASSEMBLY or | 0VM404524 |
|  | GROUND BRUSH ASSEMBLY or | 0VM404534 |
|  | GROUND BRUSH ASSEMBLY | 0VM404827 |
| B 55 | C.SLIDER L ASSEMBLY | 0VSA04487 |
| B 56 | C.SLIDER R ASSEMBLY | 0VSA04488 |
| B 58 | C.D. GEAR L ASSEMBLY | 0VSA04494 |
| B 59 | C.D. GEAR R ASSEMBLY | 0VSA04495 |
| B 60 | CASSETTE PLATE | 0VM301932 |
| B 67 | FRONT DOOR OPENER SPRING | 0VM403962 |
| B 68 | DRIVING GEAR REINFORCEMENT | 0VM402961 |
| B 72 | UPPER PLATE | 0VM201033 |
| B 73 | FE HEAD HVFHF0002A or | DHVEC01AL001 |
|  | FE HEAD VTR-1X2ERS11-109 | DHVEC01TE001 |
| B 74 | LUMINESCENCE PRISM or | 0VM301291C |
|  | LUMINESCENCE PRISM(B) | 0VM301764F |
| B 76 | REC ARM SPRING | 0VM402578 |
| B 77 | PRISM R | 0VM301292 |
| B 78 | PRISM L | 0VM301293D |
| B 79 | EARTH SPRING | 0VM403524E |
| B 80 | SPRING FOR PRESSING PACK | 0VM403674 |
| B 81 | M LEVER HOLDER | 0VM301717 |
| B 83 | RACK SPRING | 0VM403894 |
| B 98 | T,G CAP (2) | 0VM404937 |
| B 102 | FL RACK | 0VM201022J |
| B 103 | REC ARM A | 0VM301441H |
| B 104 | REC ARM B | 0VM301442G |
| B 105 | REC SPRING | 0VM403724 |
| B 108 | P.S.W F | 0VM402629 |
| B 121 | WORM | 0VM402429 |
| B 122 | P.S.W C | 0VM402626 |
| B 123 | P.S.W (WORM THRUST) | 0VM403348 |
| B 126 | PULLEY | 0VM301718D |
| B 127 | PULLEY FELT | 0VM404952 |
| B 128 | KICK ARM HOLDER | 0VM301716 |
| B 129 | PRESS FIT BUSH | 0VM403652 |
| B 130 | KICK ARM | 0VM404382 |
| B 131 | KICK ARM SPRING | 0VM404424 |
| B 132 | CLUTCH ASSEMBLY | 0VSA05509 |
| B 133 | ARM IDLER ASSEMBLY | 0VSA05512 |
| B 137 | BUSH CLUTCH | 0VM404513 |
| B 138 | FL ASSEMBLY | 0VDM05358 |
| B 139 | DOOR OPENER | 0VM300780H |
| B 140 | DOOR OPENER SPRING | 0VM402510 |
| B 142 | SHAFT LOCK ASSEMBLY | 0VSA04642 |
| B 143 | GROUND SPRING | 0VM404920A |
| B 144 | CLUTCH WASHER MK2 | 0VM404428 |
| B146 | SPRING SUPPORTER | 0VM405084 |
| L1011 | SCREW, C-TIGHT M3X9 PAN HEAD + | GPMC3090 |
| L1051 | SCREW, S-TIGHT M2.6X6 PAN HEAD + | GPMS9060 |
| L1053 | SCREW, S-TIGHT M2.6X6 PAN HEAD + | GPMS9060 |
| L1061 | SCREW, S- TIGHT M2.6 X 4PAN HEAD + | GPMS9040 |
| L1062 | SCREW, S- TIGHT M2.6 X 4PAN HEAD + | GPMS9040 |
| L1081 | SCREW,S-TIGHT BIND HEAD M3X6 | GBMS3060 |
| L1091 | S-TIGHT SCREW M3X6 CUP+ | GCMS3060 |
| L1101 | SCREW, P-TIGHT BIND HEAD 3X8 | GBMP3080 |
| L1102 | SCREW, P-TIGHT BIND HEAD 3X8 | GBMP3080 |
| L1111 | SCREW, P-TIGHT WASHER HEAD M3X8 | GCMP3080 |
| L1112 | SCREW, P-TIGHT WASHER HEAD M3X8 | GCMP3080 |
| L1121 | HEXAGON NUT M3 | NHMN030 |
| L1151 | SCREW, SEMS M3X4 PAN HEAD + | CPM33040 |
| L1191 | SCREW, P-TIGHT 2.6X10 PAN HEAD + | GPMP9100 |
| L1202 | B-TIGHT SCREW 3X6 PAN HEAD + | GPMB3060 |
| L1221 | SCREW,SPECIAL K7010UA | 0VM403688 |

| Ref. No. | Description | Part No. |
|---|---|---|
| L1231 | SPACER SCREW ASSEMBLY | 0VM403752 |
| L1241 | P-TIGHT SCREW 2X6 BIND+ | GBMP2060 |
| L1291 | P-TIGHT SCREW 2.6X6 BIND+ | GPMP9060 |

# DECK ELECTRICAL PARTS LIST

**PRODUCT SAFETY NOTE:** Products marked with a ⚠ .have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

**GENERAL NOTE:** "CBA" is an abbreviation for "Circuit Board Assembly".
**NOTE:** Parts that not assigned part numbers (------------) are not available.

Tolerance of Capacitors and Resistors are noted with the following symbols.

| | | | | |
|---|---|---|---|---|
| C..........±0.25% | F..........±1% | J..........±5% | M..........±20% | Z..........+80/-20% |
| D..........±0.5% | G..........±2% | K..........±10% | N..........±30% | |

## JOINT CBA

| Ref. No. | Description | Part No. |
|---|---|---|
| | JOINT CBA (JOINT-A/B/C)<br>Consists of the following: | 0VSA05796 |
| | JOINT (JOINT-A) BLOCK | ------------ |
| | MODE SW. (JOINT-B) BLOCK | ------------ |
| | ACE HEAD (JOINT-C) BLOCK | ------------ |

## JOINT (JOINT-A) BLOCK

| Ref. No. | Description | Part No. |
|---|---|---|
| | JOINT (JOINT-A) BLOCK<br>Consists of the following: | ------------ |
| | **Connectors** | |
| CN2801 | FFC CONNECTOR BASE, TOP 9P or | JC2SJ09ERH0C |
| | FFC CONNECTOR BASE, TOP 9P or | 1700915 |
| | FFC CONNECTOR BASE, TOP 9P or | 1700449 |
| | FFC CONNECTOR BASE, TOP 9P or | 1700515 |
| | FFC CONNECTOR BASE, TOP 9P | 1700986 |
| CN2901 | ANGLE SOCKET CONNECTOR, 20P | 1770615 |
| CN2902 | ANGLE PIN HEADER, 2P | 1740775 |
| | **Resistors** | |
| R 2801 | CARBON RES. 1/4W J 27K OHM or | RCX4JATZ0273 |
| | CARBON RES. 1/6W J 27K OHM | 132A273T |
| R 2802 | CARBON RES. 1/4W J 27K OHM or | RCX4JATZ0273 |
| | CARBON RES. 1/6W J 27K OHM | 132A273T |
| | **Miscellaneous** | |
| CL2901 | JUMPER WIRE, 5P | WX1K7010-003 |
| CL2902 | JUMPER WIRE, 6P | WX1K7010-001 |
| | FFC CABLE, 9P | WX3909OZ4413 |

## MODE SW. (JOINT-B) BLOCK

| Ref. No. | Description | Part No. |
|---|---|---|
| | MODE SW. (JOINT-B) BLOCK<br>Consists of the following: | ------------ |
| SW2901 | MODE SWITCH | SSR0104HD001 |

## ACE HEAD (JOINT-C) BLOCK

| Ref. No. | Description | Part No. |
|---|---|---|
| | ACE HEAD (JOINT-C) BLOCK<br>Consists of the following: | ------------ |
| CN2903 | FLAT CABLE CONNECTOR 6P | JEHBJ06JE001 |

## HEAD AMP (PRV) CBA

| Ref. No. | Description | Part No. |
|---|---|---|
| | HEAD AMP (PRV) CBA<br>Consists of the following: | 0VSA05795 |
| | **Capacitors** | |
| C 3501 | CERAMIC CAP. F Z 0.1UF/50V | 3F40104T |
| C 3502 | ELECTROLYTIC CAP. 100UF/6.3V M | 526R107S |
| C 3503 | ELECTROLYTIC CAP. 0.22UF/50V M | 526W224S |
| C 3504 | CERAMIC CAP. Y M 0.01UF/16V or | 3Y4D103T |
| | CERAMIC CAP. F Z 0.01UF/16V | 1220842T |
| C 3505 | CERAMIC CAP. Y M 0.01UF/16V or | 3Y4D103T |
| | CERAMIC CAP. F Z 0.01UF/16V | 1220842T |
| C 3506 | CERAMIC CAP. Y M 0.01UF/16V or | 3Y4D103T |
| | CERAMIC CAP. F Z 0.01UF/16V | 1220842T |
| C 3507 | CERAMIC CAP. F Z 0.1UF/50V | 3F40104T |
| C 3509 | CERAMIC CAP. F Z 0.1UF/50V | 3F40104T |
| C 3513 | CERAMIC CAP. SL J 15PF/50V | 3S41150T |
| C 3521 | CERAMIC CAP. B J 100PF/50V | 3B41101T |
| C 3522 | CERAMIC CAP. SL J 47PF/50V | 3S41470T |
| | **Connectors** | |
| CN3501 | ANGLE SOCKET CONNECTOR 15P | 1770610 |
| CN3502 | FFC CONNECTOR BASE, SIDE 5P or | JC96J05ERC0C |
| | FFC CONNECTOR BASE, SIDE 5P | 1700471 |
| CN3503 | CONNECTOR ASSEMBLY 2P | WX1K7010-007 |
| | **Coil** | |
| L 3501 | INDUCTOR 22UH-K-26T or | LLAXKDTKA220 |
| | INDUCTOR 22UH-K-26T | LLAXKATTU220 |
| | **IC** | |
| IC3501 | IC, VIDEO H-AMP LA7376 | QSBLA0SSY035 |
| | **Resistors** | |
| R 3501 | CARBON RES. 1/4W J 22K OHM or | RCX4JATZ0223 |
| | CARBON RES. 1/6W J 22K OHM | 132A223T |
| R 3502 | CARBON RES. 1/4W J 8.2K OHM or | RCX4JATZ0822 |
| | CARBON RES. 1/6W J 8.2K OHM | 132A822T |
| R 3503 | CARBON RES. 1/4W J 1K OHM or | RCX4JATZ0102 |
| | CARBON RES. 1/6W J 1K OHM | 132A102T |
| R 3504 | CARBON RES. 1/4W J 5.6K OHM or | RCX4JATZ0562 |
| | CARBON RES. 1/6W J 5.6K OHM | 132A562T |
| R 3505 | CARBON RES. 1/4W J 33K OHM or | RCX4JATZ0333 |
| | CARBON RES. 1/6W J 33K OHM | 132A333T |
| | **Miscellaneous** | |
| 2B 2 | SHIELD, TOP | 0VM301927 |
| 2B 3 | SHIELD, BOTTOM | 0VM301928 |
| CL3502 | JUMPER WIRE, 6P | WX1K7010-002 |